imageRUNNER C3100

SERVICE MANUAL

Canon

DU7-1113-000

JAN 2004
REV. 0

COPYRIGHT 2003 CANON INC.

Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

Corrections

This manual may contain technical inaccuracies or typographical errors due to improvements or changes in products. When changes occur in applicable products or in the contents of this manual, Canon will release technical information as the need arises. In the event of major changes in the contents of this manual over a long or short period, Canon will issue a new edition of this manual.

The following paragraph does not apply to any countries where such provisions are inconsistent with local law.

Trademarks

The product names and company names used in this manual are the registered trademarks of the individual companies.

Copyright

This manual is copyrighted with all rights reserved. Under the copyright laws, this manual may not be copied, reproduced or translated into another language, in whole or in part, without the written consent of Canon Inc.

COPYRIGHT © 2001 CANON INC.

Printed in Japan

Caution

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

Symbols Used

This documentation uses the following symbols to indicate special information:

Symbol	Description
⚠	Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning.
⚡	Indicates an item requiring care to avoid electric shocks.
🚫	Indicates an item requiring care to avoid combustion (fire).
🚫	Indicates an item prohibiting disassembly to avoid electric shocks or problems.
🔌	Indicates an item requiring disconnection of the power plug from the electric outlet.
Memo	Indicates an item intended to provide notes assisting the understanding of the topic in question.
REF.	Indicates an item of reference assisting the understanding of the topic in question.
	Provides a description of a service mode.
Error	Provides a description of the nature of an error indication.

The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.

   In the diagrams, ■■■ represents the path of mechanical drive; where a signal name accompanies the symbol, the arrow → indicates the direction of the electric signal.

   The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.
2. In the digital circuits, '1'is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low".(The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.

   In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.

All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

Contents

Chapter 1 Introduction

1.1 System Construction 1-1
  1.1.1 Overview of the Delivery Accessories System Configuration 1-1
  1.1.2 Delivery Accessorizes System Configuration 1 1-1
  1.1.3 Delivery Accessorizes System Configuration 2 1-4
  1.1.4 Delivery Accessories System Configuration 3 1-6
  1.1.5 Pickup/Original Handling Accessories System Configuration 1-7
  1.1.6 Reader Heater System Configuration 1-9
  1.1.7 Cassette Heater System Configuration 1 1-10
  1.1.8 Cassette Heater System Configuration 2 1-11
  1.1.9 Side Deck Heater System Configuration 1-13
  1.1.10 Printing/Transmitting Accessories System Configuration 1-14
  1.1.11 Functions of Printing/Transmitting Accessories 1-16
1.2 Product Specifications 1-17
  1.2.1 Names of Parts 1-17
  1.2.2 Using the Machine 1-21
  1.2.3 User Mode Items 1-27
  1.2.4 User Maintenance 1-36
  1.2.5 Safety 1-39
  1.2.6 Product Specifications 1-43
  1.2.7 Function List 1-45

Chapter 2 Installation

2.1 Making Pre-Checks 2-1
  2.1.1 Selecting the Site of Installation 2-1
  2.1.2 Check to Make Before Installation 2-8
2.2 Unpacking and Installation 2-12
  2.2.1 Unpacking and Removing the Fixing Materials 2-12
  2.2.2 Installing the Drum Unit 2-14
  2.2.3 Preparing for the Mounting of the Developing Assembly 2-17
  2.2.4 Mounting the Cyan Developing Assembly 2-20
  2.2.5 Mounting the Black Developing Assembly 2-25

2.2.6 Mounting the Yellow Developing Assembly ... 2-30
2.2.7 Mounting the Magenta Developing Assembly ... 2-31
2.2.8 After Mounting the Developing Assembly ... 2-31
2.2.9 Fixing the Machine in Place ... 2-33
2.2.10 Connecting the Cable ... 2-34
2.2.11 Setting Up the Cassette ... 2-35
2.2.12 Mounting the Toner Cartridge ... 2-36
2.2.13 Making Initial Settings for the Developing Assembly ... 2-40
2.2.14 Initializing the Drum Unit ... 2-41
2.2.15 Automatic Gradation Correction ... 2-42
2.2.16 Adjusting the Image Position ... 2-43
2.2.17 Others ... 2-48
2.2.18 If Not Connected to a Network ... 2-50
2.3 Checking the Connection to the Network ... 2-51
2.3.1 Connecting to the Network ... 2-51
2.3.2 Using PING ... 2-51
2.3.3 Making Checks Using a Remote Host Address ... 2-52
2.4 Troubleshooting the Network ... 2-53
2.4.1 Troubleshooting the Network ... 2-53
2.4.2 Making Checks Using a Loopback Address ... 2-53
2.4.3 Making a Check Using a Local Host Address ... 2-53
2.5 Checking the Images/Operations ... 2-55
2.5.1 Checking the Images ... 2-55
2.6 Relocating the Machine ... 2-56
2.6.1 Relocating the Machine ... 2-56
2.7 Installing the Card Reader-C1 ... 2-57
2.7.1 Points to Note ... 2-57
2.7.2 Checking the Contents ... 2-57
2.7.3 Installation ... 2-57
2.7.4 Using with NetSpot Accountant (NSA) ... 2-62
2.8 Installing the NE Controller-A1 ... 2-63
2.8.1 Installing the NE Controller-A1 ... 2-63
2.9 Installing the Key Switch Unit-A1 ... 2-76
2.9.1 Checking the Contents ... 2-76
2.9.2 Installation ... 2-76
2.9.3 Making Checks After Installation ... 2-81
2.10 Installing the Accessories Power Supply Unit ... 2-82
2.10.1 Checking the Contents ... 2-82
2.10.2 Turning off the Host Machine ... 2-83
2.10.3 Installing the Accessories Power Supply ... 2-83

2.10.4 Mounting the Finisher Connector Base 2-85
2.11 Installing the Document Tray-J1 2-87
2.11.1 Checking the Contents 2-87
2.11.2 Installation 2-88

Chapter 3 Basic Operation

3.1 Construction 3-1
3.1.1 Functional construction 3-1
3.1.2 Connections Among Major PCBs 3-2
3.1.3 DC Controller PCB 3-4
3.2 Basic Sequence 3-6
3.2.1 Basic Sequence of Operations at Power-On 3-6
3.2.2 Basic Sequence of Operations for a Print Job (full color) 3-8
3.2.3 Basic Sequence of Operations for a Print Job (mono color) 3-10

Chapter 4 Main Controller

4.1 Construction 4-1
4.1.1 Construction and Functions 4-1
4.2 Construction of the Electrical Circuitry 4-3
4.2.1 Main Controller PCB (main) 4-3
4.2.2 Main Controller PCB (sub) 4-5
4.2.3 Expansion Bus PCB 4-6
4.2.4 SRAM PCB 4-7
4.2.5 HDD 4-7
4.3 Start-Up Sequence 4-11
4.3.1 Overview 4-11
4.3.2 Start-Up Sequence 4-12
4.4 Actions when HDD Error 4-15
4.4.1 E602 in Detail 4-15
4.5 Image Processing 4-21
4.5.1 Outline of the Flow of Image Processing 4-21
4.5.2 Construction of the Image Processing Module 4-21
4.5.3 Reader Input Image Processing 4-22
4.5.4 Compression/Decompression and Editing Blocks 4-23
4.5.5 Printer Output Image Processing 4-24
4.6 Flow of Image Data 4-27
4.6.1 Flow of Image Data (copier function) 4-27

4.6.2 Flow of Image Data (Box function) ... 4-27
4.6.3 Flow of Image Data (SEND function) ... 4-28
4.6.4 Flow of Image Data (fax transmission) ... 4-29
4.6.5 Image Data Flow for Fax Reception Functions ... 4-30
4.6.6 Flow of Image Data (PDL function) ... 4-31
4.7 Parts Replacement Procedure ... 4-33
4.7.1 Controller Box ... 4-33
4.7.2 Main Controller PCB (main) ... 4-37
4.7.3 Main Controller PCB (sub) ... 4-42
4.7.4 Expansion Bus PCB ... 4-43
4.7.5 SRAM PCB ... 4-46
4.7.6 UFR Board ... 4-48
4.7.7 Ethernet Board ... 4-49
4.7.8 HDD ... 4-51
4.7.9 Controller Fan ... 4-54

Chapter 5 Original Exposure System

5.1 Construction ... 5-1
5.1.1 Specifications, Control Mechanisms, and Functions ... 5-1
5.1.2 Major Components ... 5-2
5.1.3 Construction of the Control System ... 5-4
5.1.4 Reader Controller PCB ... 5-5
5.2 Basic Sequence ... 5-7
5.2.1 Basic Sequence of Operations at Power-On ... 5-7
5.2.2 Basic Sequence of Operations in Response to a Press on the Start Key (book mode, 1 original) ... 5-8
5.2.3 Basic Sequence of Operations in Response to a Press on the Start Key (ADF mode, 1 original) ... 5-10
5.3 Various Control ... 5-11
5.3.1 Controlling the Scanner Drive System ... 5-11
5.3.2 Contact Sensor ... 5-14
5.3.3 Enlargement/Reduction ... 5-17
5.3.4 Controlling the Scanning Lamp ... 5-17
5.3.5 Detecting the Size of Originals ... 5-19
5.3.6 Dirt Sensor Control ... 5-25
5.3.7 Image Processing ... 5-29
5.4 Parts Replacement Procedure ... 5-34
5.4.1 Copyboard Glass ... 5-34

5.4.2 Reader Controller PCB 5-36
5.4.3 Inverter PCB 5-43
5.4.4 Scanner Motor 5-46
5.4.5 Contact Sensor 5-47
5.4.6 Original Cover Sensor 5-52
5.4.7 Contact Sensor HP Sensor 5-54
5.4.8 Original Sensor 5-56
5.4.9 Reader Heater (option) 5-59

Chapter 6 Laser Exposure

6.1 Construction 6-1
6.1.1 Specifications, Control Mechanisms, and Functions 6-1
6.1.2 Major Components 6-2
6.1.3 Construction of the Control System 6-3
6.2 Basic Sequence 6-6
6.2.1 Basic Sequence of Operations 6-6
6.3 Various Control 6-8
6.3.1 Controlling the Laser Activation Timing 6-8
6.3.2 Controlling the Intensity of Laser Light 6-12
6.3.3 Controlling the Laser Scanner Motor 6-12
6.3.4 Controlling the Laser Shutter 6-14
6.4 Parts Replacement Procedure 6-16
6.4.1 Laser Scanner Unit 6-16
6.4.2 Dust-Proofing Glass Cleaning Pad 6-18

Chapter 7 Image Formation

7.1 Construction 7-1
7.1.1 Specifications of the Image Formation System 7-1
7.1.2 Major Components of the Image Formation System 7-3
7.1.3 Specifications of the Charging System 7-5
7.2 Image Formation Process 7-8
7.2.1 Image Formation Process (outline) 7-8
7.2.2 Image Formation Process (image formation) 7-9
7.2.3 2-Side Placement Control 7-10
7.3 Basic Sequence 7-13
7.3.1 Power-On 7-13
7.3.2 Copying/Printing (normal speed) 7-15

7.3.3 Copying/Printing (half-speed) 7-16
7.3.4 Copying/Printing a Mix of Color and Black-and-White Originals 7-17
7.4 Image Stabilization Control 7-18
7.4.1 Outline of Image Stabilization Control 7-18
7.4.2 Timing of Image Stabilization Control 7-19
7.4.3 ATR Control 7-22
7.4.4 Drum Film Thickness Detection Control 7-27
7.4.5 Development Contrast Control 7-27
7.4.6 ATVC Control 7-28
7.4.7 PASCAL Control (image gradation density correction) 7-30
7.4.8 Development Gradation Density Correction Control 7-31
7.4.9 Auto Gradation Correction Function 7-31
7.5 Drum Unit 7-33
7.5.1 Drum Unit 7-33
7.6 Developing Rotary 7-39
7.6.1 Construction of the Developing Rotary 7-39
7.6.2 Developing Rotary Control 7-40
7.6.3 Developing Assembly Drive Path 7-43
7.7 Developing Unit 7-45
7.7.1 Construction of the Developing Unit 7-45
7.7.2 ACR Control (Auto Carrier Refresh control) 7-46
7.7.3 Developing Bias Control 7-50
7.8 Toner Container 7-52
7.8.1 Construction of the Toner Cartridge 7-52
7.8.2 Toner Level Detection Control 7-53
7.8.3 Toner Supply Control 7-55
7.9 Transfer Device 7-58
7.9.1 Construction of the Transfer Assembly 7-58
7.9.2 ITB Home Position Detection Control 7-59
7.9.3 Transfer Bias Control 7-62
7.9.4 Cleaning the Intermediate Transfer Belt (ITB) 7-64
7.9.5 Cleaning the Secondary Transfer Outside Roller 7-65
7.9.6 ITB Waste Toner Collection Mechanism 7-66
7.9.7 Transfer Assembly Drive Path 7-67
7.9.8 Transfer Assembly Swing Control 7-68
7.9.9 Separation 7-70
7.10 Parts Replacement Procedure 7-72
7.10.1 Drum Unit 7-72
7.10.2 Development Unit 7-76
7.10.3 Rotary Upper Cover 7-84

7.10.4 Rotary Lower Cover 7-87
7.10.5 ITB Cleaning Unit 7-88
7.10.6 ITB Waste Toner Unit 7-95
7.10.7 Intermediate Transfer Unit 7-95
7.10.8 ITB Waste Toner Detection Unit 7-109
7.10.9 Intermediate Transfer Belt 7-111
7.10.10 ITB Home Position Sensor PCB 7-130
7.10.11 Primary Transfer Roller 7-149
7.10.12 Secondary Transfer External Roller 7-169
7.10.13 Secondary Transfer Internal Roller 7-172
7.10.14 ITB Cleaning Blade 7-192
7.10.15 ITB Fan 7-201
7.10.16 Separator Eliminator 7-203
7.10.17 ATR Sensor Unit 7-203
7.10.18 Environment Sensor PCB 7-206
7.10.19 Patch Image Sensor 7-215

Chapter 8 Pickup/Feeding System

8.1 Construction 8-1
8.1.1 Specifications, Control Mechanisms, and Functions 8-1
8.1.2 Major Divisions of the Machine 8-2
8.1.3 Arrangement of the Rollers 8-3
8.1.4 Paper Paths (printer on its own) 8-5
8.1.5 Paper Paths (w/ Inner 2-Way Tray-C1) 8-6
8.1.6 Paper Paths (w/ Finisher-P1) 8-7
8.1.7 Paper Paths (w/ Finisher-Q1/Saddle Finisher-Q2) 8-9
8.1.8 Arrangement of Sensors 8-10
8.1.9 Arrangement of Clutches and Solenoids 8-11
8.1.10 Drive Transmission Routes 8-12
8.2 Basic Sequence 8-14
8.2.1 Basic Sequence of Operations at Power-On 8-14
8.2.2 Basic Sequence of Operation in Response to a Press on the Start Key 8-14
8.2.3 Increase in Speed 8-15
8.3 Detecting Jams 8-19
8.3.1 Delivery Jams 8-19
8.3.2 Stationary Jams 8-20
8.3.3 Other Jams 8-22
8.4 Cassette 8-24

8.4.1 Overview 8-24
8.4.2 Identifying the Paper Size 8-25
8.4.3 Setting Up the Universal Cassette 8-28
8.4.4 Paper Level Sensor 8-29
8.5 Cassette Pick-Up Unit 8-34
8.5.1 Overview 8-34
8.5.2 Basic Sequence of Operations 8-35
8.6 Manual Feed Pickup Unit 8-36
8.6.1 Overview 8-36
8.6.2 Basic Sequence of Operations 8-37
8.6.3 Identifying the Paper Size 8-37
8.6.4 Paper Retaining Mechanism 8-38
8.7 Registration Unit 8-41
8.7.1 Overview 8-41
8.7.2 Controlling the Horizontal Registration 8-41
8.8 Duplex Feeding Unit 8-43
8.8.1 Overview 8-43
8.8.2 Sequence of Image Formation 8-45
8.8.3 Flow of Paper (wo/ Delivery Option) 8-46
8.8.4 Flow of Paper (w/ Delivery option -internal delivery) 8-53
8.8.5 Flow of Paper (w/ Delivery option -external delivery) 8-60
8.9 Parts Replacement Procedure 8-66
8.9.1 Pickup Unit 1 8-66
8.9.2 Pickup Unit 2 8-69
8.9.3 Sensor Mounting Plate 8-71
8.9.4 Pickup Roller 8-76
8.9.5 Feed Roller 8-77
8.9.6 Separation Roller 8-78
8.9.7 Cassette Pickup Motor 1 8-79
8.9.8 Cassette Pickup Motor 2 8-80
8.9.9 Cassette Size Detection Sensor 8-82
8.9.10 Cassette Retry Paper Sensor 8-87
8.9.11 Cassette Paper Sensor 8-93
8.9.12 Cassette Paper Level Sensor (A/B) 8-98
8.9.13 Slide Resistor 8-104
8.9.14 Cassette Pickup Solenoid 8-108
8.9.15 Cassette Size Sensor Relay PCB 8-113
8.9.16 Manual Feed Pickup Clutch 8-118
8.9.17 Manual Feed Tray Unit 8-122
8.9.18 Manual Feed Unit 8-126

8.9.19 Manual Pickup Roller 8-129
8.9.20 Manual Feed Separation Pad 8-134
8.9.21 Transparency Sensor (Front/Rear) 8-138
8.9.22 Registration Sensor 8-142
8.9.23 Registration Clutch 8-149
8.9.24 Vertical Path Roller 8-150
8.9.25 Duplex Feed Roller 2 8-156
8.9.26 Duplex Feed Sensor 8-159
8.9.27 Duplex Feed Clutch 8-162
8.9.28 Delivery Assembly 1 8-166
8.9.29 Delivery Drive Unit 8-170

Chapter 9 Fixing System

9.1 Construction 9-1
9.1.1 Specifications, Control Mechanisms, and Functions 9-1
9.1.2 Major Components 9-2
9.1.3 Construction of the Control System 9-6
9.2 Basic Sequence 9-7
9.2.1 Sequence of Operations at Power-On 9-7
9.2.2 Basic Sequence of Operations During Printing 9-8
9.3 Various Control Mechanisms 9-9
9.3.1 Controlling the Speed of the Fixing Roller 9-9
9.3.2 Controlling the Fixing Roller Temperature 9-12
9.3.3 Detecting the Passage of Paper 9-20
9.4 Protective Functions 9-22
9.4.1 Detecting Overheating by the Main Thermistor (TH1) 9-22
9.4.2 Detecting Overheating by the Sub Thermistor (TH2) 9-24
9.4.3 Detecting Overheating in Relation to a Triac Short-Circuit 9-25
9.4.4 Detecting Overheating by the Thermal Switch (TP1) 9-26
9.4.5 Detecting Overheating of the Heat Retention Heater (H3) 9-26
9.4.6 Error 9-28
9.5 Parts Replacement Procedure 9-30
9.5.1 Fixing Unit 9-30
9.5.2 Fixing Upper Frame 9-33
9.5.3 Fixing Roller 9-42
9.5.4 Pressure Roller 9-52
9.5.5 Fixing Main Thermistor 9-58
9.5.6 Fixing Sub Thermistor 9-64

9.5.7 Fixing Thermal Switch 9-68
9.5.8 Fixing Main Heater/Fixing Sub Heater 9-73
9.5.9 Fixing Heat Retaining Heater 9-80
9.5.10 Fixing Inlet Guide 9-86
9.5.11 Fixing Delivery Guide 9-92
9.5.12 Fixing Inlet Sensor 9-95
9.5.13 Fixing Delivery Sensor 9-101

Chapter 10 Externals and Controls

10.1 Control Panel 10-1
10.1.1 Overview 10-1
10.1.2 LCD Processing 10-2
10.1.3 Adjusting the LCD Screen Contrast.... 10-2
10.1.4 Control Panel CPU 10-2
10.2 Counters 10-3
10.2.1 Overview 10-3
10.2.2 Timing of Increasing the Count 10-4
10.3 Fans 10-6
10.3.1 Overview 10-6
10.3.2 2-Speed Control 10-7
10.3.3 Sequence of Operations.... 10-8
10.4 Power Supply 10-9
10.4.1 Power Supply 10-9
10.4.2 Rated Output of DC Power Supply PCB 10-14
10.4.3 Protection Function 10-15
10.4.4 Backup Battery 10-16
10.4.5 Energy-Saving Function 10-17
10.5 Parts Replacement Procedure 10-21
10.5.1 Option Power Supply Assembly 10-21
10.5.2 Controller Power Supply Unit 10-22
10.5.3 Printer Power Supply Unit 10-23
10.5.4 Control Panel 10-29
10.5.5 Control Panel LCD Unit 10-30
10.5.6 DC Controller PCB 10-33
10.5.7 Leakage Breaker 10-35
10.5.8 HVT PCB 10-37
10.5.9 High-Voltage Sub PCB 10-43
10.5.10 Control Panel CPU PCB 10-45

10.5.11 Control Panel Key Switch PCB 10-48
10.5.12 Control Panel Inverter PCB 10-50
10.5.13 Main Power Switch 10-52
10.5.14 Front Cover Open/Closed Detecting Switch 10-54
10.5.15 ITB Fan 10-56
10.5.16 Toner Intake Fan 10-58
10.5.17 Machine Heat Discharge Fan 10-60
10.5.18 Toner Intake Fan Filter 10-64
10.5.19 Motor of Main Drive Assembly 10-64
10.5.20 Right Door 10-69
10.5.21 Cautions in Handling the Left Stay 10-71

Chapter 11 Maintenance and Inspection

11.1 Periodically Replaced Parts 11-1
11.1.1 Overview 11-1
11.1.2 Reader Unit 11-1
11.1.3 Printer Unit 11-1
11.2 Durables and Consumables 11-2
11.2.1 Overview 11-2
11.2.2 Reader Unit 11-2
11.2.3 Printer Unit 11-2
11.3 Scheduled Servicing Basic Procedure 11-6
11.3.1 Scheduled Servicing Basic Procedure 11-6
11.3.2 Items of Work for Scheduled Servicing (reader unit) 11-8
11.3.3 Items of Work for Scheduled Servicing (printer unit) 11-9
11.3.4 Points to Note for Scheduled Servicing Work 11-19
11.4 Cleaning 11-21
11.4.1 Cleaning the Primary Charging Roller 11-21

Chapter 12 Standards and Adjustments

12.1 Image Adjustments 12-1
12.1.1 Standards for Image Position 12-1
12.1.2 Checking the Image Position 12-1
12.1.3 Cassette 12-3
12.1.4 Manual Feed Tray 12-6
12.1.5 Side Paper Deck 12-7
12.2 Scanning System 12-10

12.2.1 After Replacing the CIS 12-10
12.2.2 After Replacing the Copyboard Glass........ 12-10
12.2.3 After Replacing the ADF Reading Glass 12-11
12.2.4 After Replacing the Reader Controller PCB or After Initializing the RAM. 12-12
12.3 Laser Exposure System........ 12-15
12.3.1 After Replacing the Laser Scanner Unit 12-15
12.4 Image Formation System 12-16
12.4.1 After Replacing the Intermediate Transfer Unit 12-16
12.4.2 After Replacing the Intermediate Transfer Belt........ 12-16
12.4.3 After Replacing the Primary Transfer Roller........ 12-16
12.4.4 After Replacing the Drum Unit........ 12-16
12.4.5 After Replacing the Developing Unit (Y, M, C)........ 12-17
12.4.6 After Replacing the Developing Unit (Bk) 12-17
12.4.7 After Replacing the Secondary Transfer Outside Roller 12-18
12.5 Fixing System 12-19
12.5.1 After Disassembling the Fixing Unit 12-19
12.5.2 After Replacing the Fixing Unit........ 12-19
12.5.3 After Replacing the Fixing Roller........ 12-19
12.5.4 Nip Adjustment 12-19
12.5.5 Point to Note About the Position of the Fixing Main Thermistor........ 12-21
12.5.6 Point to Note When Mounting the Fixing Sub Thermistor........ 12-22
12.5.7 Point to Note When Mounting the Fixing Thermal Switch 12-22
12.6 Electrical Components 12-24
12.6.1 After Replacing the Reader Controller PCB 12-24
12.6.2 After Replacing the DC Controller PCB........ 12-26
12.6.3 After Replacing the Main Controller PCB (main) 12-28
12.6.4 After Replacing the SRAM Board 12-28
12.6.5 After Replacing the HDD........ 12-29
12.6.6 When Replacing the HVT PCB 12-30
12.7 Pickup/Feeding System........ 12-32
12.7.1 Adjusting the Horizontal Registration When Replacing the Pickup Cassette .. 12-32
12.7.2 Adjusting the Horizontal Registration When Replacing the Duplex Unit.... 12-34
12.7.3 Adjust the Horizontal Registration for the Manual Feed Tray 12-35
12.7.4 Registering the Paper Width Basic Value........ 12-36

Chapter 13 Correcting Faulty Images

13.1 Making lnitial Checks 13-1

13.1.1 Checking the Site Environment 13-1
13.1.2 Checking the Paper 13-1
13.1.3 Checking the Placement of Paper 13-1
13.1.4 Checking the Durables 13-1
13.1.5 Checking the Periodically Replaced Parts 13-2
13.1.6 Checking the Units and Functional Blocks 13-2
13.1.7 Others 13-4
13.2 Test Print 13-5
13.2.1 Overview 13-5
13.2.2 Test Print TYPE 13-5
13.2.3 Selecting Test Print TYPE 13-6
13.2.4 16-Gradation (TYPE=4) 13-6
13.2.5 Full Page Halftone (TYPE=5) 13-7
13.2.6 Grid (TYPE=6) 13-8
13.2.7 MCYBk Horizontal Stripes (TYPE=10) 13-9
13.2.8 64-Gradation (TYPE=12) 13-10
13.2.9 Full Color 16-Gradation (TYPE=14) 13-11
13.3 Troubleshooting 13-13
13.3.1 Symptoms 13-13
13.3.2 Image Faults 13-14
13.3.3 Faulty Feeding 13-36
13.3.4 Malfunction 13-38
13.3.5 Printing/scanning 13-52
13.3.6 Network 13-55
13.3.7 Transmission/Fax-Related 13-55
13.3.8 Jam (Main Unit) 13-59
13.3.9 Jam (Document Feeder) 13-64
13.3.10 Error Code 13-65
13.4 Outline of Electrical Components 13-90
13.4.1 Clutch/Solenoid 13-90
13.4.2 Motor 13-92
13.4.3 Fan 13-95
13.4.4 Sensor 13-98
13.4.5 Switch 13-104
13.4.6 Lamps, Heaters, and Others 13-105
13.4.7 PCBs 13-108
13.4.8 Variable Resistors (VR), Light-Emitting Diodes (LED), and Check Pins by PCB 13-112

Chapter 14 Self Diagnosis

14.1 Error Code Table 14-1
  14.1.1 Error Code 14-1
14.2 Error Codes (SEND) 14-5
  14.2.1 Self-Diagnostic Display 14-5
  14.2.2 List of Error Codes without Messages 14-8
14.3 Error Code Details 14-18
  14.3.1 E code Overview 14-18
  14.3.2 E000 14-18
  14.3.3 E001 14-18
  14.3.4 E002 14-21
  14.3.5 E003 14-23
  14.3.6 E004 14-23
  14.3.7 E006 14-23
  14.3.8 E008 14-24
  14.3.9 E010 14-24
  14.3.10 E012 14-25
  14.3.11 E013 14-25
  14.3.12 E014 14-26
  14.3.13 E020 14-26
  14.3.14 E021 14-30
  14.3.15 E026 14-31
  14.3.16 E032 14-32
  14.3.17 E045 14-32
  14.3.18 E067 14-33
  14.3.19 E070 14-33
  14.3.20 E100 14-34
  14.3.21 E110 14-35
  14.3.22 E202 14-36
  14.3.23 E225 14-36
  14.3.24 E227 14-37
  14.3.25 E240 14-38
  14.3.26 E243 14-38
  14.3.27 E248 14-39
  14.3.28 E315 14-40
  14.3.29 E351 14-40
  14.3.30 E400 14-41
  14.3.31 E490 14-42
  14.3.32 E500 14-42

14.3.33 E503 14-43
14.3.34 E505 14-43
14.3.35 E514 14-44
14.3.36 E519 14-45
14.3.37 E530 14-46
14.3.38 E531 14-47
14.3.39 E532 14-48
14.3.40 E535 14-49
14.3.41 E537 14-50
14.3.42 E540 14-51
14.3.43 E542 14-53
14.3.44 E577 14-53
14.3.45 E580 14-54
14.3.46 E584 14-55
14.3.47 E590 14-55
14.3.48 E591 14-56
14.3.49 E592 14-56
14.3.50 E593 14-57
14.3.51 E5F0 14-58
14.3.52 E5F1 14-58
14.3.53 E5F2 14-59
14.3.54 E5F3 14-59
14.3.55 E5F4 14-60
14.3.56 E5F5 14-61
14.3.57 E5F6 14-61
14.3.58 E5F8 14-62
14.3.59 E5F9 14-63
14.3.60 E601 14-65
14.3.61 E602 14-65
14.3.62 E602 in detail 14-66
14.3.63 E604 14-71
14.3.64 E605 14-71
14.3.65 E606 14-72
14.3.66 E674 14-72
14.3.67 E677 14-73
14.3.68 E710 14-74
14.3.69 E711 14-74
14.3.70 E712 14-75
14.3.71 E713 14-76
14.3.72 E716 14-76

14.3.73 E717 14-76
14.3.74 E719 14-77
14.3.75 E730 14-78
14.3.76 E731 14-80
14.3.77 E732 14-81
14.3.78 E733 14-82
14.3.79 E740 14-83
14.3.80 E743 14-84
14.3.81 E744 14-84
14.3.82 E745 14-86
14.3.83 E746 14-87
14.3.84 E747 14-87
14.3.85 E803 14-88
14.3.86 E804 14-89
14.3.87 E805 14-89

Chapter 15　Service Mode

15.1 Outline.......... 15-1
15.1.1 Construction of Service Mode 15-1
15.1.2 Starting Service Mode and Making Selections 15-3
15.1.3 Ending Service Mode 15-4
15.1.4 Back-Up 15-4
15.1.5 Initial Screen 15-6
15.1.6 2nd/3rd Item Screen 15-7
15.1.7 4th Item Screen 15-8
15.2 DISPLAY（Status Display Mode） 15-10
15.2.1 COPIER 15-10
15.2.2 FEEDER 15-34
15.2.3 DISPLAY(Status Display Mode)Level2 15-35
15.3 I/O （I/O Display Mode） 15-40
15.3.1 Overview 15-40
15.3.2 <DC-CON> 15-41
15.3.3 <R-CON> 15-45
15.3.4 <FEEDER> 15-47
15.3.5 <SORTER> 15-48
15.3.6 <MN-CON> 15-56
15.4 ADJUST（Adjustment Mode） 15-59
15.4.1 COPIER 15-6459

15.4.2 FEEDER 15-103
15.4.3 SORTER 15-104
15.4.4 ADJUST （Adjustment Mode） Level2 15-105
15.5 FUNCTION （Operation/Inspection Mode） 15-121
15.5.1 COPIER 15-121
15.5.2 FEEDER 15-158
15.5.3 FUNCTION （operation/inspection mode） :Level 2 15-161
15.6 OPTION （Machine Settings Mode） 15-164
15.6.1 COPIER 15-164
15.6.2 SORTER 15-202
15.6.3 BOARD 15-203
15.6.4 OPTION （mechanical specifications setting mode） :Level 2 15-204
15.7 TEST （Test Print Mode） 15-235
15.7.1 COPIER 15-235
15.8 COUNTER （Counter Mode） 15-242
15.8.1 COPIER 15-242
15.8.2 FEEDER 15-257

Chapter 16 Upgrading

16.1 Outline 16-1
16.1.1 Outline of the Version Upgrade 16-1
16.1.2 Outline of the Service Support Tool 16-1
16.1.3 Network Interface of the Machine with the SST in Use 16-4
16.2 Making Preparations 16-10
16.2.1 Registering the System software 16-10
16.2.2 Making connections 16-16
16.3 Formatting the HDD 16-26
16.3.1 Formatting All Partitions 16-26
16.3.2 Formatting Selected Partitions 16-27
16.3.3 Formatting Procedure 16-28
16.4 Downloading System Software 16-41
16.4.1 Downloading the System Software 16-41
16.4.2 Downloading the RUI, and Language Module 16-52
16.4.3 Downloading the BOOT Software 16-64
16.4.4 Downloading the Dcon and Rcon Software 16-76
16.4.5 Downloading the G3 FAX Software 16-88
16.5 Uploading and Downloading Backup Data 16-100
16.5.1 Outline 16-100

16.5.2 Uploading Procedure 16-101
16.5.3 Downloading Procedure 16-111

Chapter 17 Service Tools

17.1 Special Tools.. 17-1
17.2 Solvents and Oils 17-3

Appendix

1 General Timing Chart.. 1
Full Color 1
Mono color 2
2 General Circuit Diagram 5
Signal Names.. 5
General Circuit Diagram 11

Chapter 1 Introduction

Contents

1.1 System Construction 1-1
  1.1.1 Overview of the Delivery Accessories System Configuration 1-1
  1.1.2 Delivery Accessorizes System Configuration 1..................................1-1
  1.1.3 Delivery Accessorizes System Configuration 2..................................1-4
  1.1.4 Delivery Accessories System Configuration 3 1-6
  1.1.5 Pickup/Original Handling Accessories System Configuration...........1-7
  1.1.6 Reader Heater System Configuration..1-9
  1.1.7 Cassette Heater System Configuration 1...1-10
  1.1.8 Cassette Heater System Configuration 2...1-11
  1.1.9 Side Deck Heater System Configuration 1-13
  1.1.10 Printing/Transmitting Accessories System Configuration..............1-14
  1.1.11 Functions of Printing/Transmitting Accessories.............................1-16
1.2 Product Specifications...1-17
  1.2.1 Names of Parts 1-17
    1.2.1.1 External View...1-17
    1.2.1.2 Cross Section...1-19
  1.2.2 Using the Machine 1-21
    1.2.2.1 Turning On the Power Switch..1-21
    1.2.2.2 Points to Note About Turning Off the Main Power Switch.......1-23
    1.2.2.3 Control Panel..1-25
  1.2.3 User Mode Items...1-27
    1.2.3.1 Common Settings 1-27
    1.2.3.2 Timer Settings 1-29
    1.2.3.3 Adjustment and Cleaning...1-29
    1.2.3.4 Printing Various Reports..1-30
    1.2.3.5 System Control Settings 1-31
    1.2.3.6 Copy Function Settings 1-32
    1.2.3.7 Common Transmission Function Settings 1-33
    1.2.3.8 Box Function Settings..1-34
    1.2.3.9 Printer Function Setting 1-34
    1.2.3.10 Address List Settings...1-35
  1.2.4 User Maintenance...1-36

  1.2.4.1 Cleaning 1-36
  1.2.4.2 Inspection 1-37
1.2.5 Safety 1-39
  1.2.5.1 CDRH Regulations 1-39
  1.2.5.2 Handling the Laser Unit 1-40
  1.2.5.3 Safety of the Laser Light 1-42
  1.2.5.4 Safety of Toner 1-43
1.2.6 Product Specifications 1-43
  1.2.6.1 System and Functions 1-43
  1.2.6.2 Others 1-45
1.2.7 Function List 1-45
  1.2.7.1 First Copy Time 1-45
  1.2.7.2 Printing Speed 1-46
  1.2.7.3 Types of Paper 1-47

1.1 System Construction

1.1.1 Overview of the Delivery Accessories System Configuration

The machine's delivery accessories may be configured into any of the following 3 patterns.

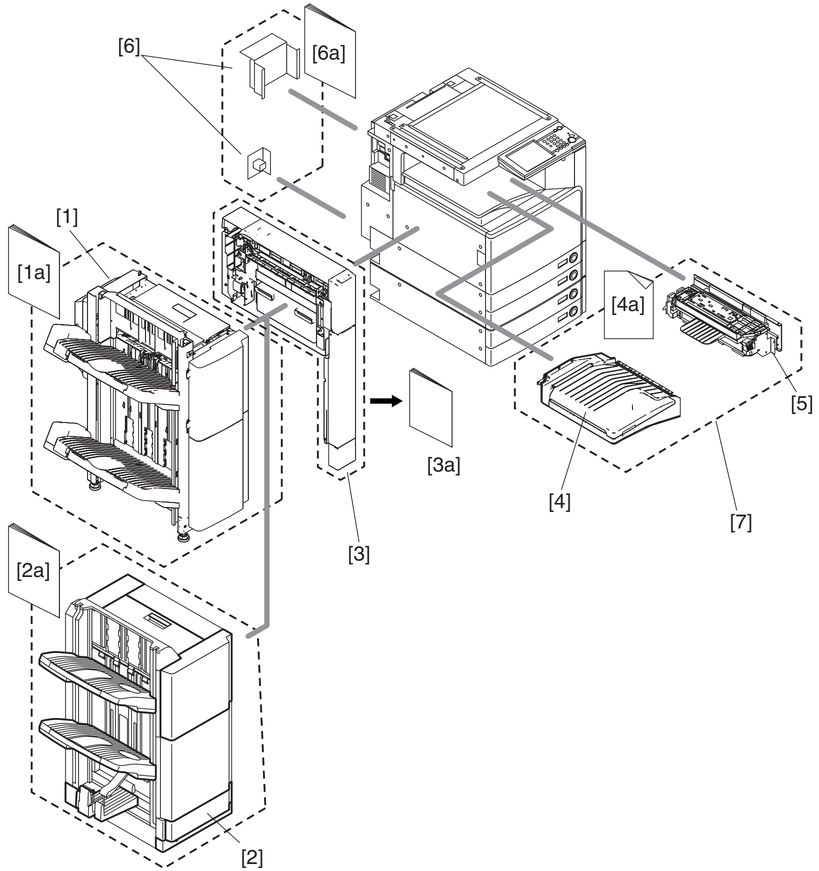
- if a large volume of paper must be dealt with or multiple types of processing (e.g., stapling, punching) are needed, delivery accessories configuration 1
- if no more than a stapling level of processing is needed, delivery accessories system configuration 2
- if no more than a sorting level (3-output) of processing is needed, delivery accessories system configuration 3

See the diagrams of individual constructions that follow.

1.1.2 Delivery Accessorizes System Configuration 1

iR C3100

The following is a diagram of the system configurations:



F-1-1

T-1-1

[1]	Finisher-Q1 (marketing scheduled for August 2003)	[1a]	Installation Procedure - Installing the Finisher-Q1 - Installing the Buffer Path 4 - Installing the Relay Delivery Assembly 5

[2]	Saddle Finisher-Q2 (marketing scheduled for August 2003)	[2a]	Installation Procedure - Installing the Saddle Finisher-Q2 - Installing the Buffer Path - Installing the Relay Delivery Assembly - Installing the Saddle (for Q2)
[3]	Punch Unit	[3a]	Installation Procedure - Installing the Punch Unit
[4]	Buffer Path	[4a]	Installation Sheet
[5]	Relay Delivery Assembly (for Finisher-Q1/Saddle Finisher Q2)		
[6]	Accessories Power Supply-P1 (if 120/230 V, standard; needed for installation of 1 thorough 5)	[6a]	Installation Procedure - Installing the Accessories Power Supply-P1
[7]	Buffer Path Unit-C1		

The following is a list of functions and accessories needed to make use of these functions:

T-1-2

Function	Accessories
- 2-output delivery - stapling	Finisher-Q1 or Saddle Finisher-Q2 Accessories Power Supply-P1 Buffer Path Unit-C1

T-1-3

Function	Accessories
- 3-output delivery - stapling	Finisher-Q1 or Saddle Finisher-Q2 Accessories Power Supply-P1 Buffer Path Unit-C1

T-1-4

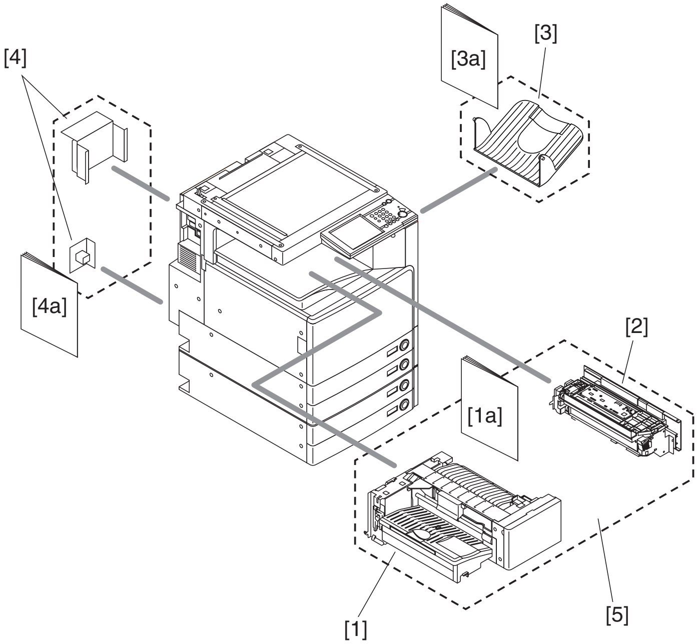
Function	Accessories
- saddling	Saddle Finisher-Q2 Accessories Power Supply-P1 Buffer Path Unit-C1

T-1-5

Function	Accessories
- punching	Finisher-Q1 or Saddle Finisher-Q2 Accessories Power Supply-P1 Buffer Path Unit-C1 Punch Unit

1.1.3 Delivery Accessorizes System Configuration 2

The following is a diagram of the system configuration:



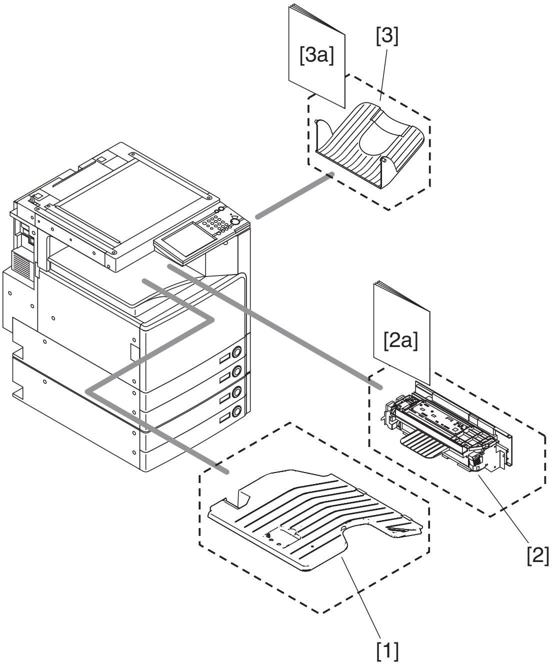
F-1-2

T-1-6

[1]	Finisher Block	[1a]	Installation Procedure - Installing the Finisher-P1 - Installing the Relay Delivery Assembly 2
[2]	Relay Delivery Assembly (for Finisher-P1)		
[3]	Copy Tray-J1	[3a]	Installation Procedure - Installing the Copy Tray-J1
[4]	Accessories Power Supply-P1 (if 120/230 V, standard; needed for installation of 1 or 2)	[4a]	Installation Procedure - Installing the Accessories Power Supply-P1
[5]	Finisher-P1		

1.1.4 Delivery Accessories System Configuration 3

The following is a diagram of the system configuration:



F-1-3

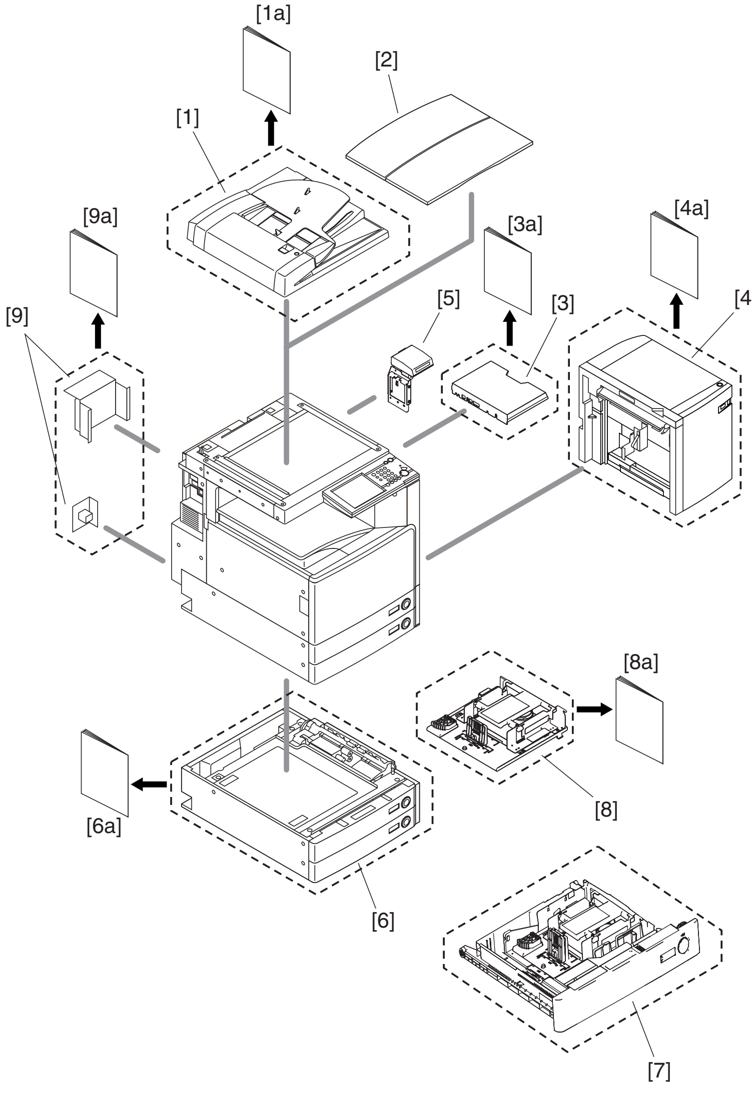
T-1-7

[1]	Internal Delivery Tray		
[2]	Inner 2-Way Tray-C1 (power supplied by printer unit, does not require Accessories Power Supply-P1)	[2a]	Installation Procedure - Installing the Inner 2-Way Tray-C1 - Installing the Inner Delivery Tray

[3]	Copy Tray-J1	[3a]	Installation Procedure - Installing the Copy Tray-J1

1.1.5 Pickup/Original Handling Accessories System Configuration

The following is a diagram of the system configuration:


[1a]
[2]
[1]
[9a]
[3a]
[4a]
[5]
[3]
[4]
[9]
[8a]
[6a]
[8]
[6]
[7]

F-1-4

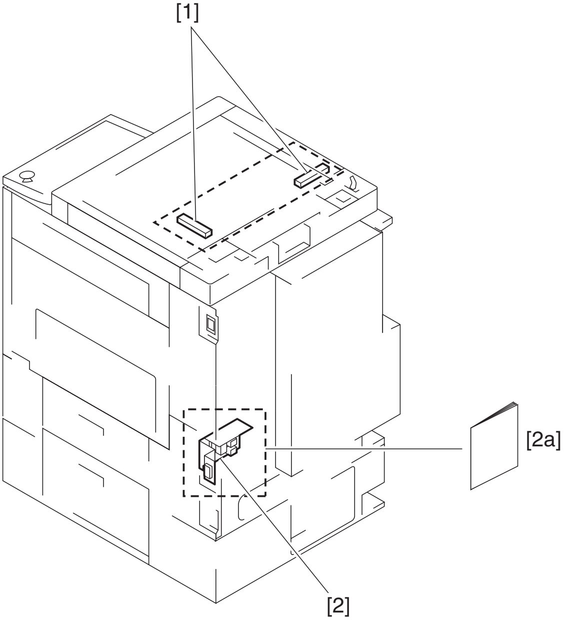
T-1-8

[1]	DADF-L1	[1a]	Installation Procedure - Installing the ADF-L1
[2]	Platen Cover Type-H1		
[3]	Original Holder-J1	[3a]	Installation Procedure - Installing the Original Holder-J1
[4]	Side Paper Deck-Q1	[4a]	Installation Procedure - Installing the Side Paper Deck-Q1
[5]	Card Reader-B1, Card Reader Mounting Kit-B1		
[6]	2-Cassette Pedestal-Y1	[6a]	Installation Procedure - Installing the 2-Cassette Pedestal-Y1
[7]	Envelope Cassette-C1 (100V)		
[8]	Envelope Cassette Attachment-C1 (115/200V)	[8a]	Installation Procedure - Installing the Envelope Cassette Attachment-C1
[9]	Accessories Power Supply-P1 (if 120/230V, standard; required for Side Paper Deck-Q1 4)	[9a]	Installation Procedure - Installing the Accessories Power Supply-P1

1.1.6 Reader Heater System Configuration (100V machine only)

iR C3100

The following is a diagram of the system configuration:



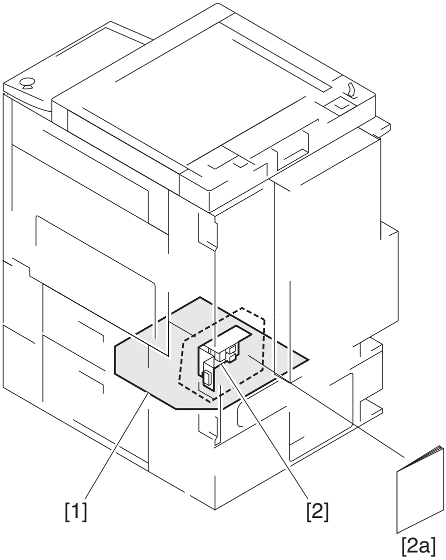
F-1-5

T-1-9

[1]	Reader Heater Unit-B1
[2]	Heater PCB-B1
[2a]	Installation Procedure - Installing the Heater PCB - Installing the Cassettes Heater Unit-24 (mounting to printer unit) - Reader Heater Unit-B1

1.1.7 Cassette Heater System Configuration 1 (100V machine only)

The following is a diagram of the system configuration:



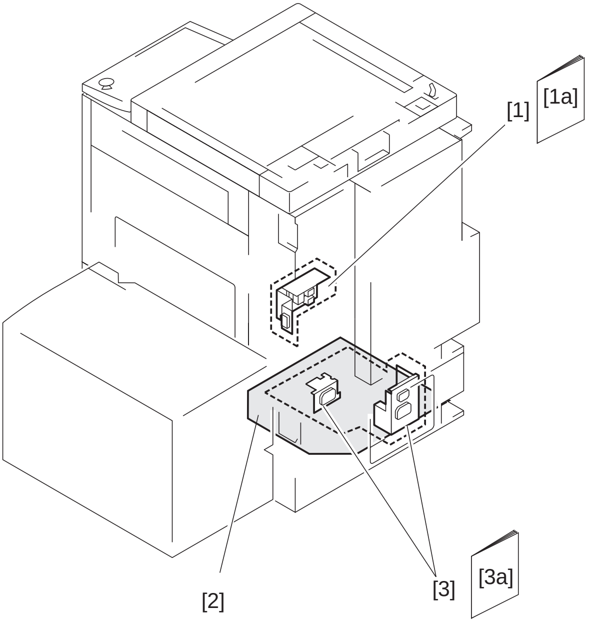
F-1-6

T-1-10

[1]	Cassette Heater Unit-24 (installation to the printer unit indicated) (requires Heater PCB-B1 for operation)
[2]	Heater PCB-B1
[2a]	Installation Procedure - Installing the Heater PCB-B1 - Installing the Cassette Heater Unit-24 (installation to the printer unit) - Installing the Reader Heater Unit-B1

1.1.8 Cassette Heater System Configuration 2 (100V machine only)

The following is a diagram of the system configuration:



F-1-7

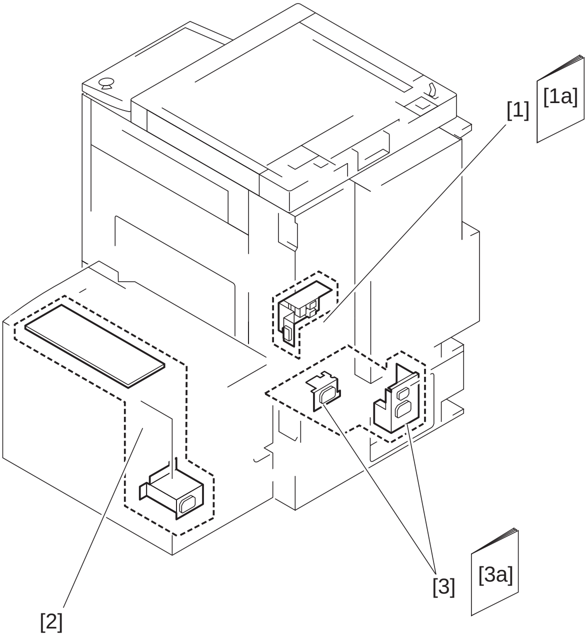
T-1-11

[1]	Heater PCB-B1
[1a]	Installation Procedure - Installing the Heater PCB-B1 - Installing the Cassette Heater Unit-24 (installation to printer unit) - Installing the Reader Unit-BL
[2]	Cassette Heater Unit-24 (installation to cassette pedestal indicated) (requires Heater PCB-B1 and Cassette Heater Mounting Kit-B1 for operation)
[3]	Cassette Heater Mounting Kit-B1

[3a] Installation Procedure
- Installing the Cassette Heater Mounting Kit-B1
- Installing the Cassette Heater Unit-25
- Installing the Cassette Heater Unit-24
  (installation to cassette pedestal)

1.1.9 Side Deck Heater System Configuration (100V machine only)

The following is a diagram of the system configuration:



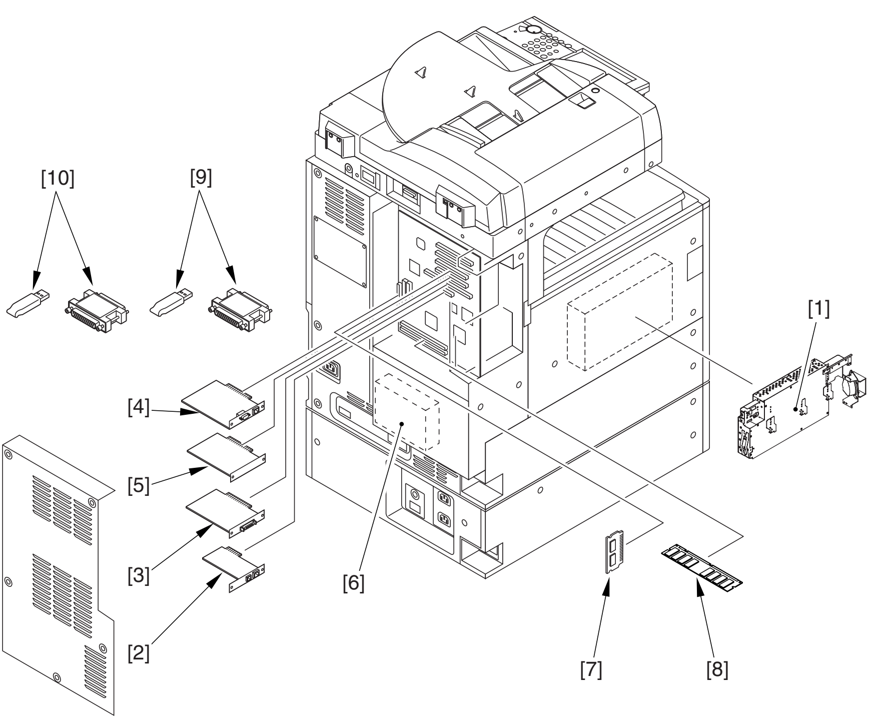
F-1-8

T-1-12

[1]	Heater PCB-B1
[1a]	Installation Procedure - Installing the Heater PCB-B1 - Installing the Cassette Hater Unit-24 (installation to printer unit) - Installing the Reader Unit-B1
[2]	Cassette Heater Unit-25 (requires heater PCB-B1 and Cassette Heater Mounting Kit-B1 for operation)
[3]	Cassette Heater Mounting Kit-B1
[3a]	Installation Procedure - Installing the Cassette Heater Mounting Kit-B1 - Installing the Cassette Unit-25 - Installing the Cassette Heater Unit-24 (installation to cassette pedestal)

1.1.10 Printing/Transmitting Accessories System Configuration

The following is a diagram of the system configuration:



F-1-9

[1] Super G3 Fax Board-N1 (standard if iR C3100F)

[2] Ethernet Board (standard)

[3] UFR Board or Open Interface Board

[4] USB Interface Board-A2 or TokenRing Board-TB84

[5] Image Conversion Board-A1

[6] PS Print Server Unit-D1

[7] PDL Expansion Kit-B1 (LIPS; boot ROM for LIPS model: 100 V model only)

[8] Color iR 256 MB Expansion RAM (optional for 100-V model or standard for 120/230-V model)

[9] SEND Function Expansion CIP/CIU (dongle for functional expansion)

[10] iR Security Kit AIP/AIU (dongle for functional expansion)

1.1.11 Functions of Printing/Transmitting Accessories

The following is a table of functions expected of printing/transmitting accessories:

T-1-13

	UFR Printer/ Scanner Kit-B1	**SEND Expansion Kit-CIP/CIU**	**Image Conversion Board-A1**	**USB Interface Board-A2**	**Super G3 Fax Board-N1**
GDI-UFR printing	yes*	-	-	-	-
SEND function	-	yes	yes	-	-
Faxing	-	-	yes	-	yes
Local printing	yes*	-	-	yes	-

The following is a brief explanation of the functions expected of the accessories; for details, see the chapters that follow:

- UFR Printer/Scanner-B1

adds the GDI-UFR printing function and a scanning function in combination with ScanGear.

- SEND Function Expansion CIU-CIP/CIU

adds a transmission function; the setup work calls for a PC, requiring the selection of CIP (parallel port) or CIU (USB port) depending on the type of connection offered by the PC.

- Image Conversion Board-A1

needed when a transmission/fax function is added.

- USB Interface Board-A2

adds a printing function by connection to a PC in a local configuration (USB); requires a UFR board.

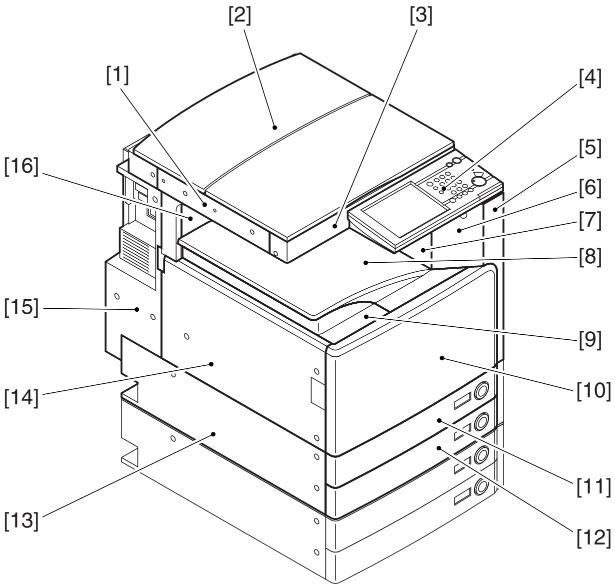
- Super G3 Fax Board-N1

adds the G3 fax function.

1.2 Product Specifications

1.2.1 Names of Parts

1.2.1.1 External View


[1]
[2]
[3]
[4]
[5]
[6]
[7]
[8]
[9]
[10]
[11]
[12]
[13]
[14]
[15]
[16]

F-1-10

[1] ADF reading glass retainer

[2] Copyboard cover

[3] Reader cover (front)

[4] Control panel

[5] Support cover (right)

[6] Support cover

[7] Delivery tray right cover

[8] Delivery tray

[9] Delivery tray lower cover

[10] Front cover

[11] Cassette 1

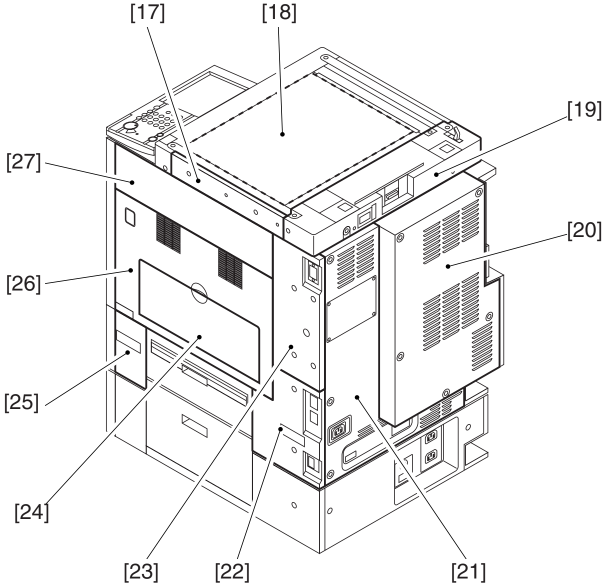
[12] Cassette 2

[13] Left cover (lower)

[14] Left cover

[15] Left cover (rear)

[16] Delivery tray rear cover



F-1-11

[17] Reader cover (right)

[18] Copyboard glass

[19] Reader cover (rear)

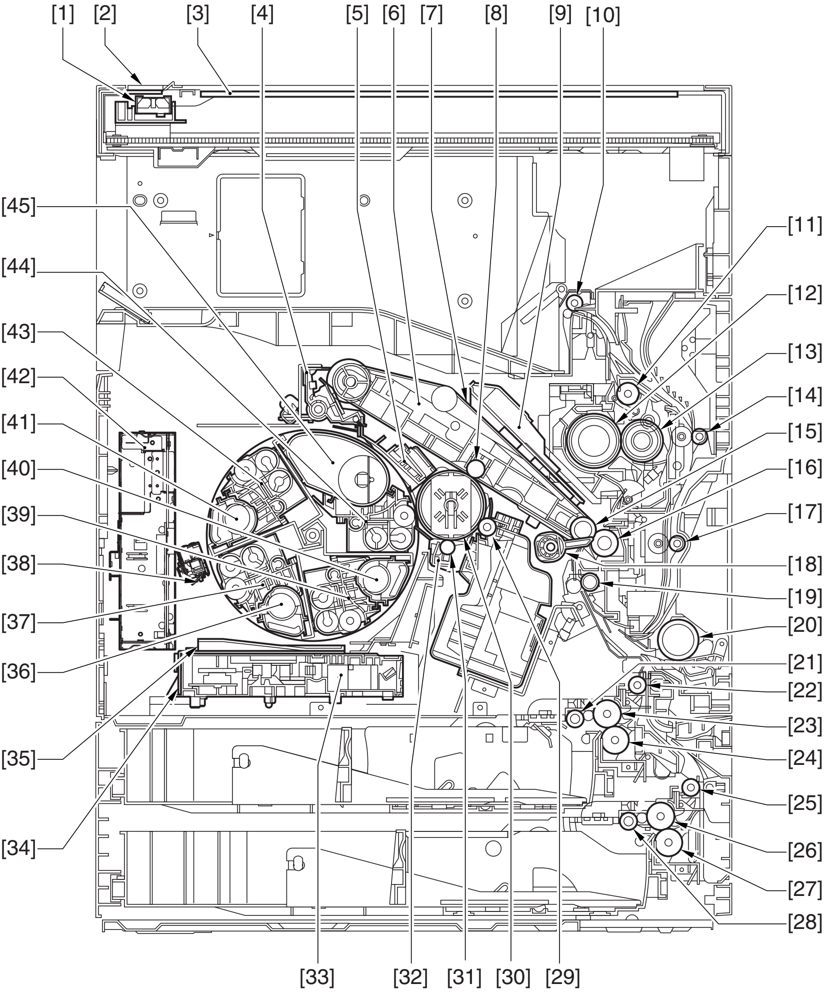
[20] Rear cover (right)

[21] Rear cover (left)

[22] Right cover (lower rear)

[23] Right cover (upper rear)
[24] Manual feed pickup tray
[25] Right cover (lower front)
[26] Right door unit
[27] Right cover (upper)

1.2.1.2 Cross Section


[1]
[2]
[3]
[4]
[5]
[6]
[7]
[8]
[9]
[10]
[11]
[12]
[13]
[14]
[15]
[16]
[17]
[18]
[19]
[20]
[21]
[22]
[23]
[24]
[25]
[26]
[27]
[28]
[29]
[30]
[31]
[32]
[33]
[34]
[35]
[36]
[37]
[38]
[39]
[40]
[41]
[42]
[43]
[44]
[45]

F-1-12

T-1-14

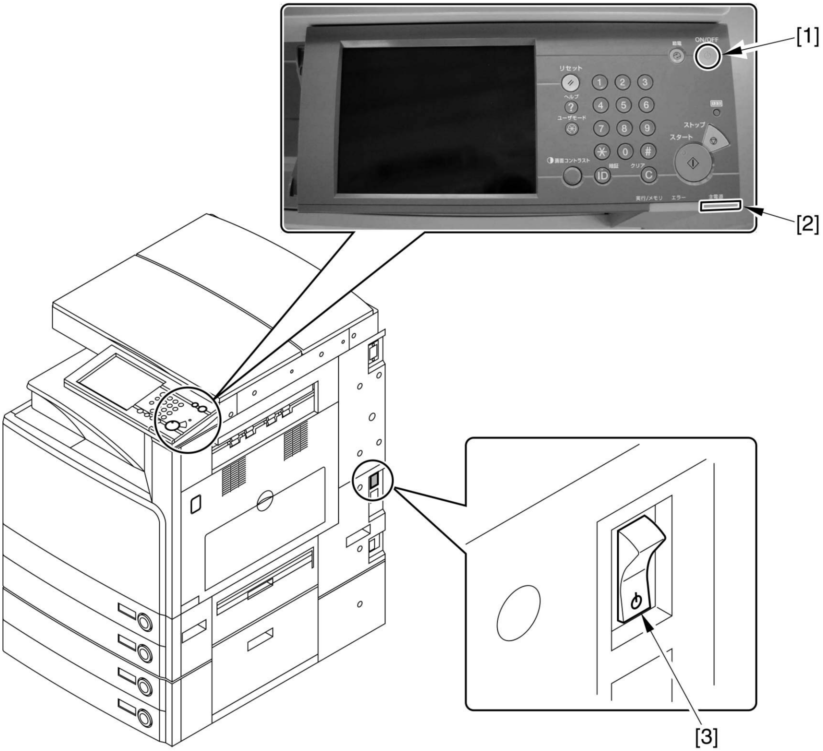
[1]	CIS unit	[23]	Feed roller (cassette 1)
[2]	ADF reading glass	[24]	Separation roller (cassette 1)

[3]	Copyboard glass
[4]	Intermediate transfer belt cleaner unit
[5]	Patch sensor unit
[6]	Intermediate transfer unit
[7]	Intermediate transfer belt
[8]	Primary transfer roller
[9]	Intermediate transfer belt fan duct
[10]	Delivery roller
[11]	Fixing outlet roller
[12]	Fixing roller
[13]	Pressure roller
[14]	Duplex feed roller 1
[15]	Secondary transfer inside roller
[16]	Secondary transfer external roller
[17]	Duplex feed roller 2
[18]	Secondary transfer outside roller releasing arm
[19]	Registration roller
[20]	Manual feed pickup roller
[21]	Pickup roller (cassette 1)
[22]	Vertical path roller 1
[25]	Vertical path roller 2
[26]	Feed roller (cassette 2)
[27]	Separation roller (cassette 2)
[28]	Pickup roller (cassette 2)
[29]	Brush roller
[30]	Photosensitive drum
[31]	Primary charging roller
[32]	Drum unit
[33]	Laser scanner unit
[34]	Dust-blocking sheet
[35]	Toner receptacle
[36]	Toner cartridge (M)
[37]	Developing assembly (M)
[38]	ATR sensor
[39]	Developing assembly (Y)
[40]	Toner cartridge (Y)
[41]	Toner cartridge (C)
[42]	Fax unit
[43]	Developing assembly (C)
[44]	Developing assembly (Bk)
[45]	Toner cartridge (Bk)

1.2.2 Using the Machine

1.2.2.1 Turning On the Power Switch

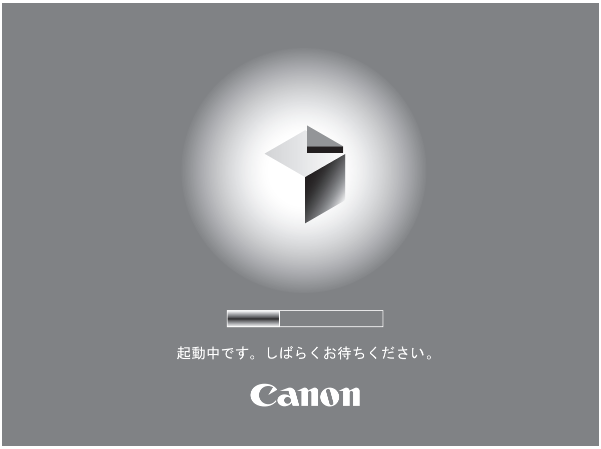
The machine has 2 power switches: main power switch and control panel power switch. Normally, the machine goes on when its main power switch is turned on, i.e., when it is not in power save mode, low power mode, or sleep mode.


[1]
[2]
[3]
ON/OFF
リセット
ヘルプ
ユーザモード
ストップ
スタート
ID
C

F-1-13

[1] Control panel power switch
[2] Main power lamp
[3] Main power switch

⚠Never turn off the power while the progress bar is indicated. The HDD is being accessed, and turning off the power can well damage the HDD (E602).



起動中です。しばらくお待ちください。

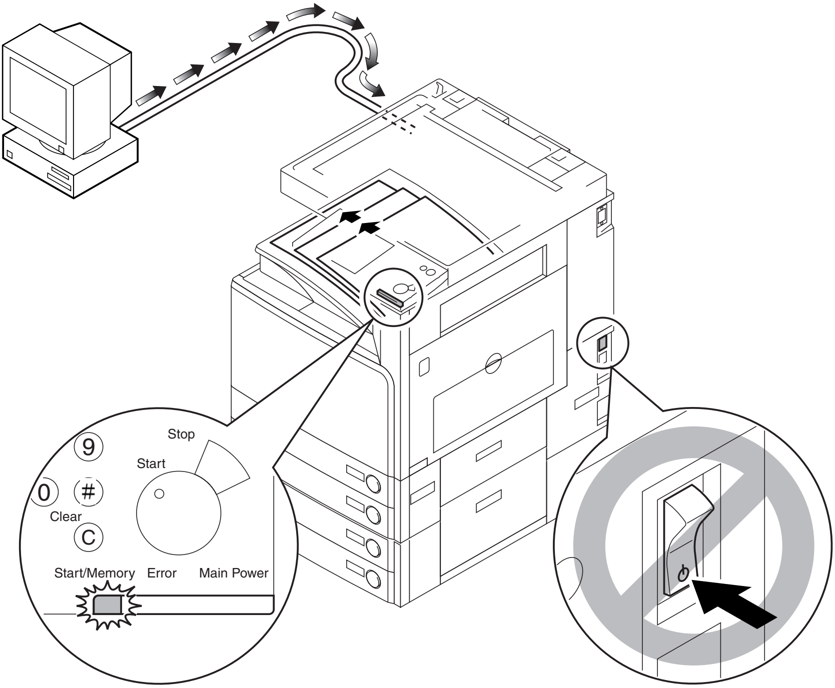
F-1-14

1.2.2.2 Points to Note About Turning Off the Main Power Switch

Be sure always to turn off the control panel power switch before turning off the main power switch.

⚠While Printing to the Printer/Receiving a Fax

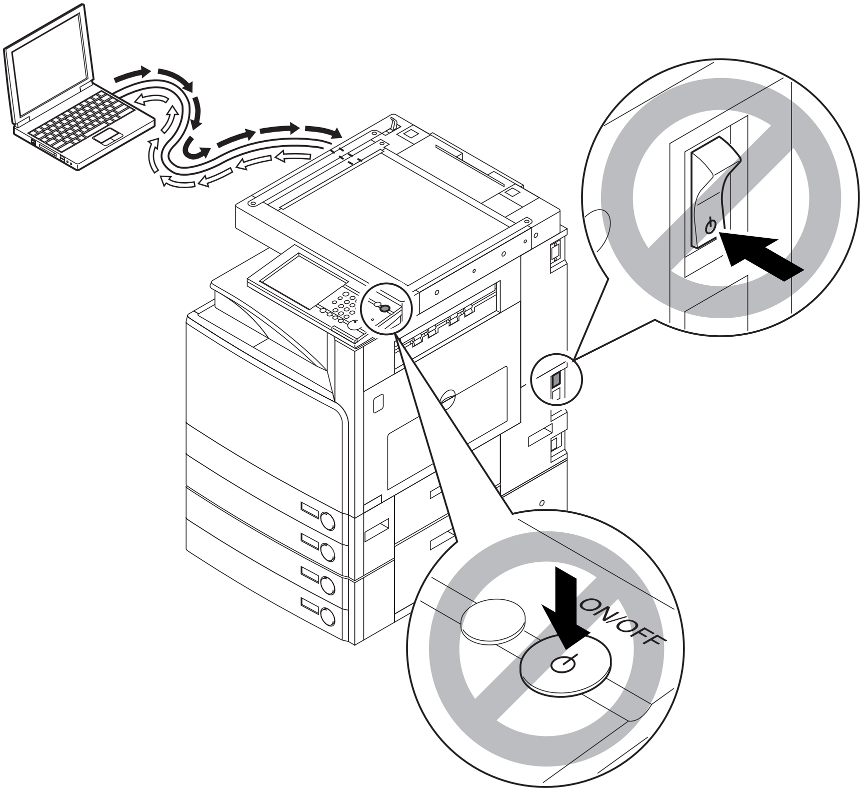
Be sure that the Start/Memory lamp on the control panel is off when operating the main power switch. (Turning off the main power switch can result in the loss of the data being processed.)


Stop
Start
9
0
#
Clear
C
Start/Memory
Error
Main Power

F-1-15

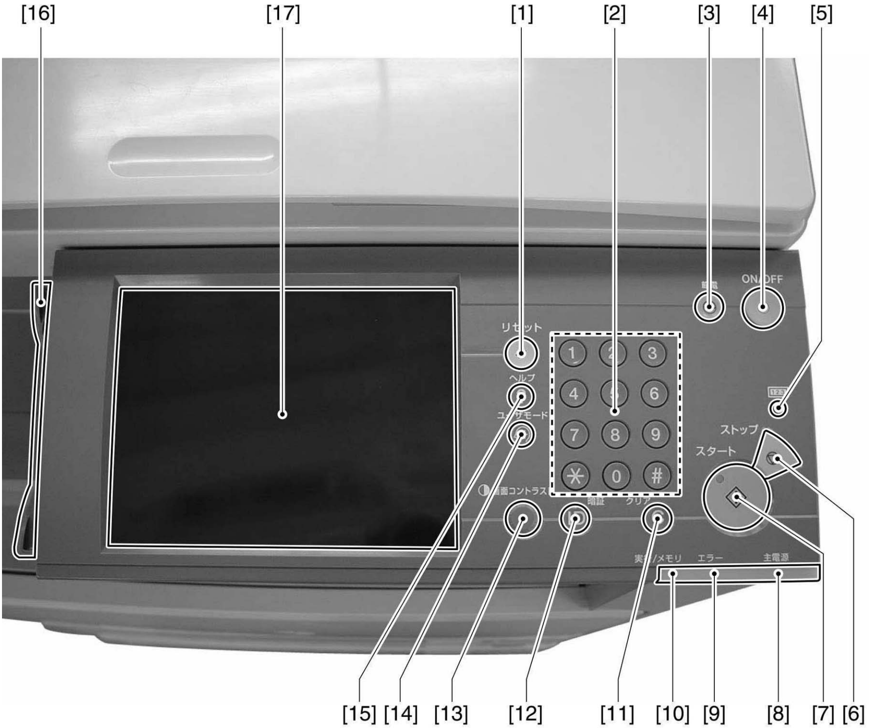
⚠When Downloading Is Under Way

Never turn off the main power switch/control panel power switch while downloading is under way. (Turning off the main power switch while downloading is under way can cause the machine operation to fail.)



F-1-16

1.2.2.3 Control Panel


[16]
[17]
[1]
[2]
[3]
[4]
[5]
リセット
ヘルプ
ユーザモード
画面コントラスト
暗証
クリア
節電
ON/OFF
ストップ
スタート
実行/メモリ
エラー
主電源
[15]
[14]
[13]
[12]
[11]
[10]
[9]
[8]
[7]
[6]

F-1-17

T-1-15

[1] Reset key

[2] Keypad

[3] Power Save key

[4] Control panel power switch

[5] Counter Check key

[6] Stop key

[7] Start key

[10] Start/Memory lamp

[11] Clear key

[12] ID key

[13] Contrast dial

[14] Additional Function key

[15] Help key

[16] Touch pen

[8] Main power lamp	[17] Touch panel
[9] Error lamp	

1.2.3 User Mode Items

1.2.3.1 Common Settings

- Factory Settings

T-1-16

Mode	**Description**
initial settings	initial function: *copy/transmit/box/MEAP
	system initial screen: on/*off
	priority on system device: *on/off
post-auto clear function	*return/do not return
buzzer	input sound: *on/off
	invalid input sound: on/*off
	replenish pre-warning sound: on/off
	warning sound: *on/off
	job end sound: *on/off
	residual original alert sound: on/*off
paper level message display	*ON/OFF
priority on text/photo with black-and-while selected for auto color selection	text/*photo
inch input	enable/disable inch input (on/*off; on if 230V model)
cassette auto selection	for copy, off for manual, on for others
	for printer, on for all

Mode	Description
	for box, off for manual, on for others
	for fax, off for manual, on for others
	for copy, off for manual, on for others
envelope cassette selection	ENV.1/ENV.2
paper type selection	yes
save power mode	-10%, -25%, -50%, no return
power consumption in sleep	*low/high
special tray selection	for tray A, copy/box/fax/printer/others
	may be tray A, B, or C
LTRR/STMT original distinction	manual/*on if LTRR/on if STMT
special tray selection (w/ finisher; fax reception)	yes
output priority	copy: *1/2/3
	printer: 1/*2/3
	box: 1/2/*3
	fax reception: 1/2/*3
	others: 1/2/*3
manual feed envelope selection	on/*off (in Japanese model; outside Japan, always on)
manual feed paper standard mode selection	on (paper size/paper type)/*off
local print standard mode	paper selection: auto paper/cassette 1 thorough 5
	number of prints: *1 to 2000
	sort: sort/group/staple sort/*shift sort/shift group/rotation sort/rotation group/punch hole/Z-fold
	double-sided print: on (left/right, top/bottom)/*off
	post-print file deletion: on/*off
	file merge: on/*off
display language switch-over	ON/*OFF

Mode	Description
scan color reversal	ON/*OFF
job-to-job shift	*ON/OFF
cleaning alert for original reading area	* ON/OFF
JPEG compression rate for remote scan	high/*medium/low
gamma value for remote scan	1.0, 1.4, *1.8, 2.2
function control mode	*ON/OFF
common settings initialization	initialize?: yes/no

1.2.3.2 Timer Settings

- Factory Settings

T-1-17

Mode	Description
date/time	by time zone/daylight saving *off
auto sleep time	10, 15, 20, 30, 40, 50 min; *1, 1.5, 2, 3, 4 hr
auto clear rime	0=disable;1, *2, ---, 9 min (in 1-min increments)
weekly timer	00:00 to 23:59 from Sunday to Saturday (in 1-min increments)
low power mode shift interval	10, *15, 20, 30, 40, 50 min; 1, 1.5, 2, 3, 4 hr

1.2.3.3 Adjustment and Cleaning

- Factory Settings

T-1-18

Mode	Description
zoom fine tuning	XY independent; -1.0 to +1.0% (in 0.1% increments)/*0%
middle bind staple edging (w/ finisher)	Start key
middle bind position change (w/ finisher)	size: A3, 11x17/B4/A4R, LTRR
auto gradation correction	no display
	full correction (text printing to read start x 3 times)
	quick correction (no test printing)
density correction	copy/transmit, 9 steps each (at time of shipment, set to 5)
	copy box/black-and-white transmit/color transmit, 9 steps each (at shipment, set to 5)
machine inside cleaning	Start key
feeder cleaning	Start key
toner replacement without prompt	black/yellow/magenta/cyan

1.2.3.4 Printing Various Reports

- Factory Settings

T-1-19

Mode	Description
Transmit (in keeping with specifications)	transmission result report: *only if error/on/off
	original indication: *on/off
communications control report	auto printing after every 100 communications: *on/off
	printing at specified time: on/*off

Mode	Description
time specification	*00:00 to 23:59
	transmission/reception separation: (toggle) on/*off
fax (in keeping with specifications)	fax transmission result report: *only if error/on/off
	original indication: *on/off
fax communications control report	auto printing after every 40 communications: *on/ off
	printing at specified time: on/*off
	time specification: *00:00 to 23:59
	transmission/reception separation: (toggle) on/*off
fax reception result report	only if error: /ON/*OFF
fax box reception report	*ON/OFF
list print (transmission)	address list: list print
user data list (transmission)	print user data list?: yes/no
user data list (fax)	user data list: print user data list? yes/no
user data list (network)	user data list: print user data list? yes/no

1.2.3.5 System Control Settings

T-1-20

Mode	Description
system administrator information	by ID, address
group ID	ON/*OFF
communications control setting	by e-mail/fax/box
remote user interface	*ON/OFF
restrictions on address list	ID/access No.: on/*off

Mode	Description
device information setting	by device name/site of installation
network setting	(TCP/IP) on/*off; various information
	(Net Ware) on/*off; various information
	(Apple Talk) on/*off; individual phases
	(SMB) on/*off; various information
	(SNMP) *on/off; various information
	(special report) *ON/OFF
	(spool function) ON/*OFF
	(start-up time) *5 sec; 0 to 300 sec
	(Ethernet driver) auto detection: *on/off; or others
	(e-mail/I fax) SMTP: *on/off; POP: *on/off; others

1.2.3.6 Copy Function Settings

T-1-21

Mode	Description
preference key 1	*no setting (settings include magnification, sorter, page separation)
preference key 2	*no setting (settings include magnification, sorter, page separation)
priority of image orientation	ON/*OFF
copy wait time	ON/*OFF
auto vertical/horizontal rotation	*ON/OFF
standard mode change	set/initialize
copy function initialization	yes/no

1.2.3.7 Common Transmission Function Settings

T-1-22

Mode	Description
common transmission function setting	sender registration (99 max.)
	user abbreviation (various choices)
	FTP transmission selection (on/*off)
	error file clear (*on/off)
	JPEG compression rate (high/*medium/low)
	transfer error processing (always print/save/*off)
	number of retries (*3; may be 0 through 5)
	transmission function change (read: 150x150; file: TIFF/JPEG; others)
	routine task registration (M1 to M9)
	PDF image level (data/*plain/image quality; text mode: on/*off)
	transmission screen (*default/one-touch/new)
	source (indicate/*do not indicate)
	color transmission gamma (1.0/1.4/1.8/*2.2)
	transmission function initialization (yes/no)
common reception function setting	cassette selection (all; *on/off)
	image reduction (on/*off)
	reception information (attach/*do not attach)
	2-on-1 (on/*off)
fax basic registration	user telephone number (input accepted)
	line type (*20 pps/10 pps/push-tone)

Mode	Description
	volume control (alarm sound, communication sound)
fax transmission function setting	ECM (*on/off)
	pause length (*2 sec; 1 through 15 sec)
	auto redial (*on/off)
fax reception function setting	ECM (*ON/OFF)

1.2.3.8 Box Function Settings

T-1-23

Mode	Description
box setting	user box setup/register (99 max.)
	read setup (register/initialize)
	fax box setup/register (49 max.)

1.2.3.9 Printer Function Setting

T-1-24

Mode	Description
settings	number of copies (1 to 2000; *1)
	simplex/duplex (double-sided/*single-sided)
	save blank paper (*yes/no)
	pickup (size: A4; type: plain; do not replace)

Mode	Description
	print adjustment (super smooth; toner density for individual colors; save toner)
	page layout (bind lengthwise, margin 0; -30 to +30 mm; horizontal correction 0/vertical correction 0; -50- to +50 mm)
	error skip (yes/*no)
	print deletion interval (*1, 2, 3, 6, 12, 24 hr)
	time-out (*15 sec/disabled; may be varied between 5 and 300)
	RIP (yes/*no)
	sort (*no/rotation sort/rotation group)
	transparency interleaf (*no/blank paper interleaf/printed paper interleaf)
	printer operation mode (*auto; or from 6 other choices)
	emulation (*no; from other 4 choices)
	auto switch-over (LIPS/ESC-P/15577/HP-GL; all)
	color mode (*auto/full color/monochrome)
	gradation (*standard/zoom 1/zoom 2; *yes apply to graphics; *yes apply to image)
	halftone selection (text: resolution/gradation/*error diffusion; graphics: resolution/gradation/error diffusion; image: resolution/error/error diffusion)
	printer initialize (yes/no)
	LIPS/emulation (12 items)
utility	printer initialize (yes/no)

1.2.3.10 Address List Settings

T-1-25

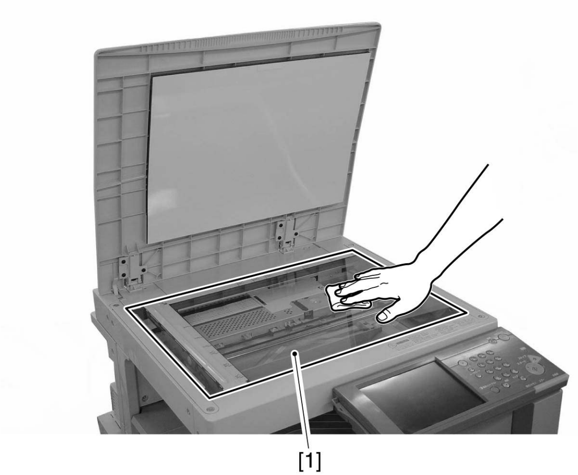
Mode	Description
address registration	individual items
address list name registration	address list from 1 to 10; individual items
one-touch button registration	#001 to #200; individual items

1.2.4 User Maintenance

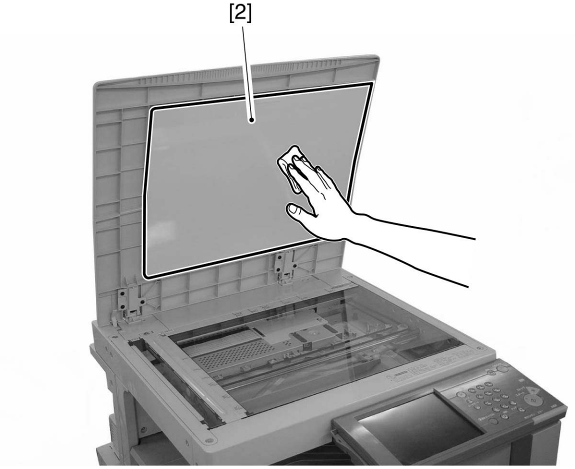
1.2.4.1 Cleaning

- Copyboard Glass and Back of Copyboard Cover (Platen Cover Type H)
Advise the user to be sure to clean the surface of the copyboard glass and the back of the copyboard cover at least once a once.

Cleaning Procedure
Wipe the surface of the copyboard glass [1] and the back of the copyboard cover (white plate) [2] with a cloth moistened with mild detergent (well wrung); then, dry wipe them.



F-1-18



F-1-19

1.2.4.2 Inspection

- Checking the Operation of the Leakage Breaker

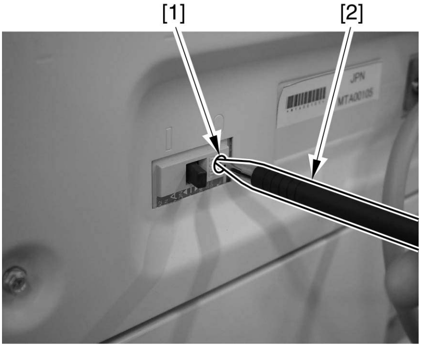
Advise the user to be sure to check the leakage breaker at least once or twice a month and keep a record of checks.

Inspection Procedure

1) Turn on the main power switch.

2) Press the test button [1] of the breaker with the tip of a ball-point pen [2].

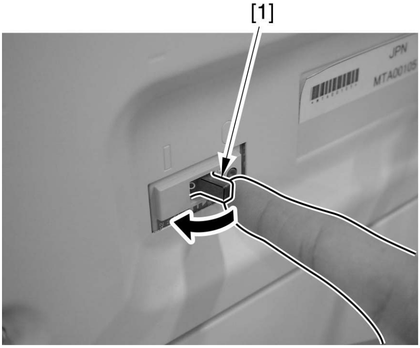
3) Check to see that the breaker switch shifts to the OFF side and the power goes off.


[1]
[2]
JPN
MTA00105

F-1-20

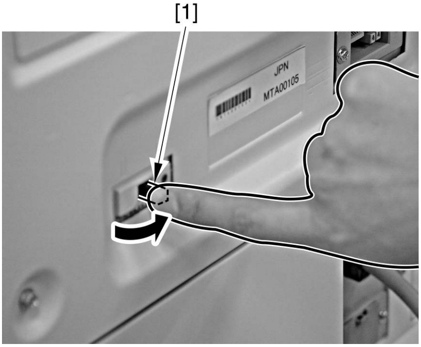
4) Turn off the main power switch.

5) Shift the breaker switch [1] to the ON side.

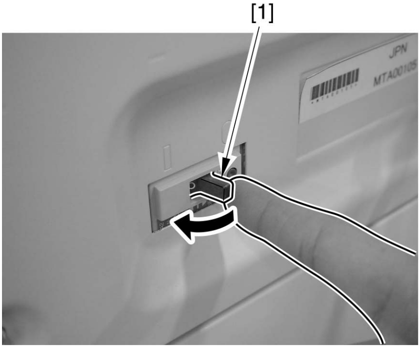

[1]
JPN
MTA00105

F-1-21

⚠If the breaker switch stops between ON and OFF sides, shift it back to the OFF side first and then shift it to the ON side.



F-1-22



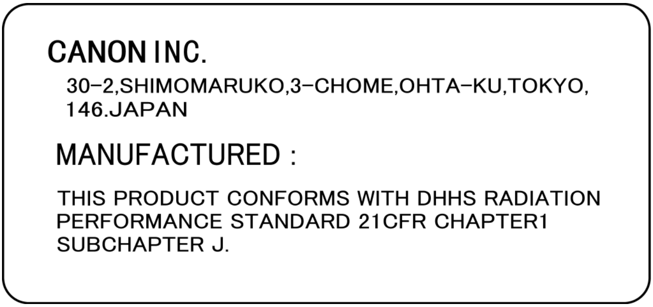
F-1-23

6) Turn on the main power switch.

1.2.5 Safety

1.2.5.1 CDRH Regulations

The Center for Devices and Radiological Health of the US Food and Drum Administration put into force regulations concerning laser products on August 2, 1976. These regulations apply to laser products manufactured on and after August 1, 1976, and the sale of laser products not certified under the regulations is banned within the Untied States. The label shown here indicates compliance with the CDRH regulations, and its attachment is required on all laser products that are soled in the United States.



CANON INC.
30–2,SHIMOMARUKO,3–CHOME,OHTA–KU,TOKYO,
146.JAPAN

MANUFACTURED :

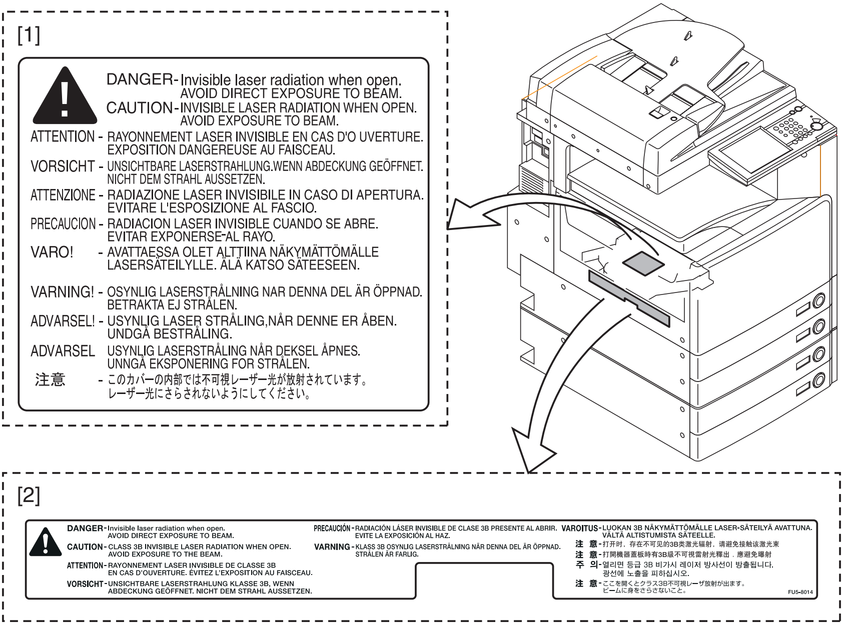
THIS PRODUCT CONFORMS WITH DHHS RADIATION
PERFORMANCE STANDARD 21CFR CHAPTER1
SUBCHAPTER J.

F-1-24

⚠ A different description may be used for a different product.

1.2.5.2 Handling the Laser Unit

If you must service the area around the machine's laser unit, be sure to take full care to avoid exposure to laser light: do not insert a tool (e.g., screwdriver or those with a high reflectance) into the laser path; also, remove watches, rings, and the like before starting the work, as they reflect laser light.
The machine's laser light is red in color, and an appropriate label ([1] to [4]) is attached to all covers that can reflect laser light. Keep also in mind that the machine's laser unit cannot be adjusted in the field.



[1]

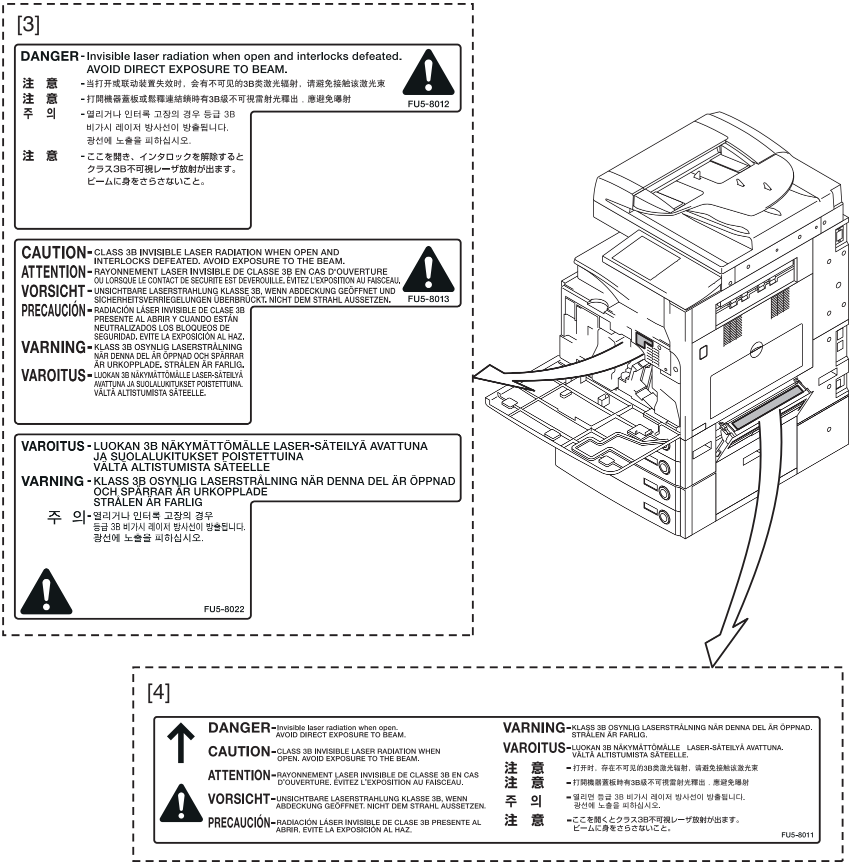
DANGER- Invisible laser radiation when open.
AVOID DIRECT EXPOSURE TO BEAM.
CAUTION- INVISIBLE LASER RADIATION WHEN OPEN.
AVOID EXPOSURE TO BEAM.
ATTENTION - RAYONNEMENT LASER INVISIBLE EN CAS D'O UVERTURE.
EXPOSITION DANGEREUSE AU FAISCEAU.
VORSICHT - UNSICHTBARE LASERSTRAHLUNG.WENN ABDECKUNG GEÖFFNET.
NICHT DEM STRAHL AUSSETZEN.
ATTENZIONE - RADIAZIONE LASER INVISIBILE IN CASO DI APERTURA.
EVITARE L'ESPOSIZIONE AL FASCIO.
PRECAUCION - RADIACION LASER INVISIBLE CUANDO SE ABRE.
EVITAR EXPONERSE AL RAYO.
VARO! - AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE
LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

VARNING! - OSYNLIG LASERSTRÅLNING NAR DENNA DEL ÄR ÖPPNAD.
BETRAKTA EJ STRÅLEN.
ADVARSEL! - USYNLIG LASER STRÅLING,NÅR DENNE ER ÅBEN.
UNDGÅ BESTRÅLING.
ADVARSEL USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES.
UNNGÅ EKSPONERING FOR STRÅLEN.
注意 - このカバーの内部では不可視レーザー光が放射されています。
レーザー光にさらされないようにしてください。

[2]

DANGER- Invisible laser radiation when open.
AVOID DIRECT EXPOSURE TO BEAM.
CAUTION- CLASS 3B INVISIBLE LASER RADIATION WHEN OPEN.
AVOID EXPOSURE TO THE BEAM.
ATTENTION- RAYONNEMENT LASER INVISIBLE DE CLASSE 3B
EN CAS D'OUVERTURE. ÉVITEZ L'EXPOSITION AU FAISCEAU.
VORSICHT- UNSICHTBARE LASERSTRAHLUNG KLASSE 3B, WENN
ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
PRECAUCIÓN- RADIACIÓN LÁSER INVISIBLE DE CLASE 3B PRESENTE AL ABRIR.
EVITE LA EXPOSICIÓN AL HAZ.
VARNING- KLASS 3B OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD.
STRÅLEN ÄR FARLIG.
VAROITUS- LUOKAN 3B NÄKYMÄTTÖMÄLLE LASER-SÄTEILYÄ AVATTUNA.
VÄLTÄ ALTISTUMISTA SÄTEELLE.
注 意- 打开时，存在不可见的3B类激光辐射，请避免接触该激光束
注 意- 打開機器蓋板時有3B級不可視雷射光釋出，應避免曝射
주 의- 열리면 등급 3B 비가시 레이저 방사선이 방출됩니다.
광선에 노출을 피하십시오.
注 意- ここを開くとクラス3B不可視レーザ放射が出ます。
ビームに身をさらさないこと。
FU5-8014

F-1-25


[3]
DANGER - Invisible laser radiation when open and interlocks defeated. AVOID DIRECT EXPOSURE TO BEAM.
注 意 - 当打开或联动装置失效时，会有不可见的3B类激光辐射，请避免接触该激光束
注 意 - 打開機器蓋板或鬆釋連結鎖時有3B級不可視雷射光釋出，應避免曝射
주 의 - 열리거나 인터록 고장의 경우 등급 3B 비가시 레이저 방사선이 방출됩니다. 광선에 노출을 피하십시오.
注 意 - ここを開き、インタロックを解除するとクラス3B不可視レーザ放射が出ます。ビームに身をさらさないこと。
FU5-8012
CAUTION - CLASS 3B INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO THE BEAM.
ATTENTION - RAYONNEMENT LASER INVISIBLE DE CLASSE 3B EN CAS D'OUVERTURE OU LORSQUE LE CONTACT DE SECURITE EST DEVEROUILLE. ÉVITEZ L'EXPOSITION AU FAISCEAU.
VORSICHT - UNSICHTBARE LASERSTRAHLUNG KLASSE 3B, WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNGEN ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.
PRECAUCIÓN - RADIACIÓN LÁSER INVISIBLE DE CLASE 3B PRESENTE AL ABRIR Y CUANDO ESTÁN NEUTRALIZADOS LOS BLOQUEOS DE SEGURIDAD. EVITE LA EXPOSICIÓN AL HAZ.
VARNING - KLASS 3B OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRRAR ÄR URKOPPLADE. STRÅLEN ÄR FARLIG.
VAROITUS - LUOKAN 3B NÄKYMÄTTÖMÄLLE LASER-SÄTEILYÄ AVATTUNA JA SUOLALUKITUKSET POISTETTUINA. VÄLTÄ ALTISTUMISTA SÄTEELLE.
FU5-8013
VAROITUS - LUOKAN 3B NÄKYMÄTTÖMÄLLE LASER-SÄTEILYÄ AVATTUNA JA SUOLALUKITUKSET POISTETTUINA VÄLTÄ ALTISTUMISTA SÄTEELLE
VARNING - KLASS 3B OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRRAR ÄR URKOPPLADE STRÅLEN ÄR FARLIG
주 의 - 열리거나 인터록 고장의 경우 등급 3B 비가시 레이저 방사선이 방출됩니다. 광선에 노출을 피하십시오.
FU5-8022
[4]
DANGER - Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION - CLASS 3B INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM.
ATTENTION - RAYONNEMENT LASER INVISIBLE DE CLASSE 3B EN CAS D'OUVERTURE. ÉVITEZ L'EXPOSITION AU FAISCEAU.
VORSICHT - UNSICHTBARE LASERSTRAHLUNG KLASSE 3B, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
PRECAUCIÓN - RADIACIÓN LÁSER INVISIBLE DE CLASE 3B PRESENTE AL ABRIR. EVITE LA EXPOSICIÓN AL HAZ.
VARNING - KLASS 3B OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG.
VAROITUS - LUOKAN 3B NÄKYMÄTTÖMÄLLE LASER-SÄTEILYÄ AVATTUNA. VÄLTÄ ALTISTUMISTA SÄTEELLE.
注 意 - 打开时，存在不可见的3B类激光辐射，请避免接触该激光束
注 意 - 打開機器蓋板時有3B級不可視雷射光釋出，應避免曝射
주 의 - 열리면 등급 3B 비가시 레이저 방사선이 방출됩니다. 광선에 노출을 피하십시오.
注 意 - ここを開くとクラス3B不可視レーザ放射が出ます。ビームに身をさらさないこと。
FU5-8011

F-1-26

1.2.5.3 Safety of the Laser Light

Laser light can prove to be hazardous to the human body. The machine's laser unit is fully enclosed in a protective housing and external covers so that its light will not escape outside as long as the machine is used normally.

1.2.5.4 Safety of Toner

The machine's toner is a non-toxic material made of plastic, iron, and small amounts of dye.

⚠Do not throw toner into fire. It may cause explosion.

Toner on Clothing or Skin

1. If your clothing or skin has come into contact with toner, wipe it off with tissue; then, wash it off with water.
2. Do not use warm water, which will cause the toner to jell and fuse permanently with the fibers of the cloth.
3. Do not bring toner into contact with plastic material. It tends to react easily.

1.2.6 Product Specifications

1.2.6.1 System and Functions

Body	Desktop
Photosensitive medium	OPC (62 mm in diameter)
Exposure method	by laser
Charging method	by charging roller
Development method (mono)	by dry, 2-component toner
Development method (color)	by dry, 2-component toner
Cassette pickup method	separation retard (center reference)
Multifeeder pickup method	simplified duplex method (center reference)
Transfer method	by intermediate belt
Transfer method (primary transfer)	by transfer roller

Transfer method (secondary transfer)	by transfer roller
Separation method	by curvature + static eliminator
Drum cleaning method	by cleaning blade
Trasnsfer cleaning method	by cleaning blade
Fixing method	Fixing method
Delivery method	face-down
Warm-up time	6 min or less (at power-on)
Toner type	non-magnetic, negative (S toner; for both mono and full color)
Print area	maximum imaging area: 305 x 450.5 mm; guaranteed maximum imaging area: 300 x 450.5 mm
Copying resolution	600 x 600 dpi
Printing resolution	600 x 600 dpi
Duplex method	tray-less duplexing
Toner level detection function	yes
Cassette capacity	550 sheets (of 80 g/m2 paper)
Multifeeder tray capacity	55 sheets (of 64 g/m2 paper)
Non-image width (leading edge)	2.5 -1.5, +1.5 mm (single-/double-sided)
Non-image width (left/ right)	2.5 -1.5, +1.5 mm mm (single-sided left/double-sided left)
Image margin (leading edge)	2.5 -1.5, +1.5 mm mm (single-sided); 2.5 -2.0, +2.0 mm (double-sided)
Image margin (left/right)	2.5 -1.5, +1.5 mm mm (single-sided, left edge); 2.5 -2.0, +2.0mm (double-sided, left side)
Image margin (trailing edge)	4 mm (single-sided; reference only); 4 mm (double-sided, reference only)
Energy save mode	yes (saving at -10%, -25%, -50%; no return time; shift to low-power mode after specific period of time)

Low-power mode	yes (fixing assembly remains on; shifts to sleep mode after specific period of time)
Sleep mode	yes
Option	See sections on system configurations.

1.2.6.2 Others

Operating environment (temperature range)	5 deg C to 30 deg C
Operating environment (humidity range)	5% RH to 80% RH
Operating environment (atmospheric pressure)	0.6 to 1.0 bar
Noise	During printing: 71dB or less (BK) During printing: 73dB or less (4C) During standby: 50dB or less
Power consumption	Maximum: 1185W During standby: 281.1W During continuous printing: 706.92W (BK) During continuous printing: 526.26W (4C)
Ozone	Maximum: 0.02ppm or less Average: 0.01ppm or less
Dimensions	Width (W): 565mm Depth (D): 755mm Height (H): 754mm
Weight	Main unit: 65kg (cartridge not included)

1.2.7 Function List

1.2.7.1 First Copy Time

T-1-26

	Single-sided	
	Full color	**Bk mono**
A4 plain paper (64 to 105 g/m2) Cassette as source	23.9	8
A4 heavy paper (106 to 163 g/m2)	37.6	23.2
Manual feed tray as source	37.6	8

(unit: sec)

1.2.7.2 Printing Speed *

T-1-27

		Single-sided		**Auto Duplexing (FD delivery)**	
Paper type	**Paper size**	**Full color**	**Bk mono**	**Full color**	**Bk mono**
Plain paper (64 to 105 g/m2)	A3/LDR	3.5 (3.1)	16.0 (14.2)	1.7 (-)	4.8 (-)
	B4/LGL	3.5 (3.1)	16.0 (14.2)	1.7 (-)	4.8 (-)
	A4R/LTRR/ B5R	3.5 (3.1)	16.0 (14.2)	1.7 (-)	4.8 (-)
	A4/LTR/B5	7.0 (3.5)	31.8 (22.8)	3.5 (-)	10.3 (-)
	A5R/STMTR	7.0 (3.5)	16.0 (14.2)	3.5 (-)	4.8 (-)
	12×18	3.5 (3.1)	15.0 (13.0)	1.7 (-)	4.5 (-)

			Single-sided		**Auto Duplexing (FD delivery)**	
Paper type		**Paper size**	**Full color**	**Bk mono**	**Full color**	**Bk mono**
Heavy paper (106 to 163 g/m2)		A3/LDR	1.6 (1.6)	2.2 (2.2)	----	----
		B4/LGL	1.6 (1.6)	2.2 (2.2)	----	----
		A4R/LTRR/ B5R	1.6 (1.6)	2.2 (2.2)	----	----
		A4/LTR/B5	3.2 (1.9)	4.5 (3.2)	----	----
Transparency		LTR/A4	3.2 (1.9)	7.0 (7.0)	----	----
Postcard (manually fed)		----	1.9	3.2	----	----
Envelope	from cassette (Monarch)	----	1.6 (1.9)	2.4 (3.2)	----	----
	from manual feed tray (Monarch)	----	1.6 (1.9)	2.4 (3.2)	----	----

Values inside parentheses represent manual feeding. (unit: copies/min)

* During printing, the engine may occasionally pause for internal adjustment.

1.2.7.3 Types of Paper

T-1-28

Type	Size	Source		
		Manual feed tray	Cassette	Side paper deck-Q1

Plain paper, eco paper, recycled paper		A3, B4, A4R, LDR, LGL, LTRR	yes	yes	no
		A4, LTR	yes	yes	yes
		B5, EXE	yes	yes	no
		A5R, STMTR	yes	yes	no
		B5R	yes	yes	no
		A5, STMT, SRA3	yes	no	no
		12"x 18"	yes	yes	no
Special paper	Heavy paper	A3, B4, A4, A4R, B5, B5RLDR, LGL, LTR, LTRRSRA3, 12"x 18"	yes	yes	no
	Transparency	A4, LTR	yes	yes	no
	Postcard	Postcard A46R modified; double-postcard A5/A5R modified	yes	no	no
	4-plane postcard	A4/A4R modified	yes	no	no
	Label paper	A4, A4R, LTR, LTRR	yes	no	no
	3-hole paper	same as plain paper	yes	yes	yes
	Tracing paper	A3, B4, A4	yes	yes	no
	Envelope	Com10, Monarch, DL, ISO-C5ISO-B5, YOKEI No. 4	yes	yes	no

Chapter 2 Installation

Contents

2.1 Making Pre-Checks 2-1
  2.1.1 Selecting the Site of Installation 2-1
  2.1.2 Check to Make Before Installation 2-8
2.2 Unpacking and Installation 2-12
  2.2.1 Unpacking and Removing the Fixing Materials 2-12
  2.2.2 Installing the Drum Unit 2-14
  2.2.3 Preparing for the Mounting of the Developing Assembly 2-17
  2.2.4 Mounting the Cyan Developing Assembly 2-20
  2.2.5 Mounting the Black Developing Assembly 2-25
  2.2.6 Mounting the Yellow Developing Assembly 2-30
  2.2.7 Mounting the Magenta Developing Assembly 2-31
  2.2.8 After Mounting the Developing Assembly 2-31
  2.2.9 Fixing the Machine in Place 2-33
  2.2.10 Connecting the Cable 2-34
  2.2.11 Setting Up the Cassette 2-35
  2.2.12 Mounting the Toner Cartridge 2-36
  2.2.13 Making Initial Settings for the Developing Assembly 2-40
  2.2.14 Initializing the Drum Unit 2-41
  2.2.15 Automatic Gradation Correction 2-42
  2.2.16 Adjusting the Image Position 2-43
  2.2.17 Others 2-48
  2.2.18 If Not Connected to a Network 2-50
2.3 Checking the Connection to the Network 2-51
  2.3.1 Connecting to the Network 2-51
  2.3.2 Using PING 2-51
  2.3.3 Making Checks Using a Remote Host Address 2-52
2.4 Troubleshooting the Network 2-53
  2.4.1 Troubleshooting the Network 2-53
  2.4.2 Making Checks Using a Loopback Address 2-53
  2.4.3 Checking the Connection of the Network Cable 2-53
2.5 Checking the Images/Operations 2-55
  2.5.1 Checking the Images 2-55

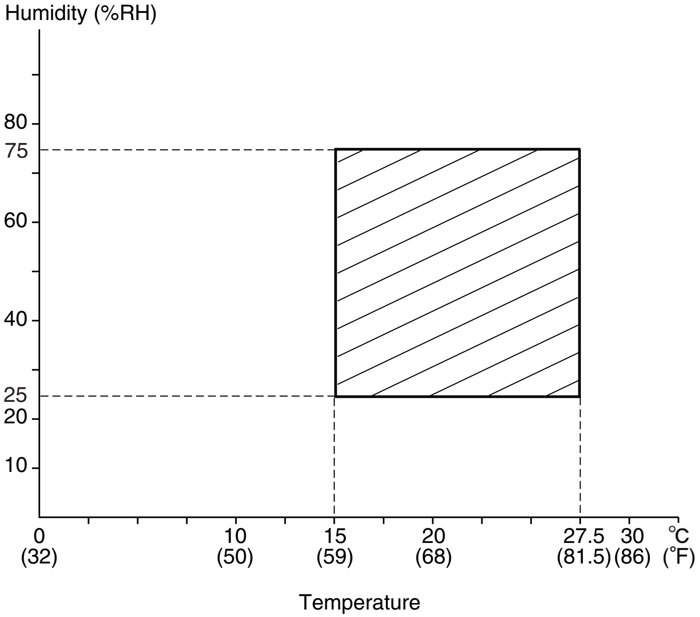
2.6 Relocating the Machine 2-56
    2.6.1 Relocating the Machine 2-56
2.7 Installing the Card Reader-C1 2-57
    2.7.1 Points to Note...2-57
    2.7.2 Checking the Contents 2-57
    2.7.3 Installation..2-57
    2.7.4 Using with NetSpot Accountant (NSA)..2-62
2.8 Installing the NE Controller-A1 2-63
    2.8.1 Installing the NE Controller-A1...2-63
2.9 Installing the Key Switch Unit-A1 2-76
    2.9.1 Checking the Contents 2-76
    2.9.2 Installation..2-76
    2.9.3 Making Checks After Installation..2-81
2.10 Installing the Accessories Power Supply Unit 2-82
    2.10.1 Checking the Contents 2-82
    2.10.2 Turning Off the Host Machine 2-82
    2.10.3 Installing the Accessories Power Supply...................................2-83
    2.10.4 Mounting the Finisher Connector Base 2-85
2.11 Installing the Document Tray-J1 2-87
    2.11.1 Checking the Contents...2-87
    2.11.2 Installation 2-88

2.1 Making Pre-Checks

2.1.1 Selecting the Site of Installation

Select the site of installation against the following requirements; if possible, visit the user's before delivery of the machine:

1) There must be a power outlet properly grounded and rated as indicated (+, -10%) for exclusive use by the machine.
2) The environment of the room must be as indicated in the following diagram, and the machine must not be installed near a water faucet, water boiler, humidifier, or refrigerator:



F-2-1

3) The machine must not be installed near a source of fire or in an area subject to dust or

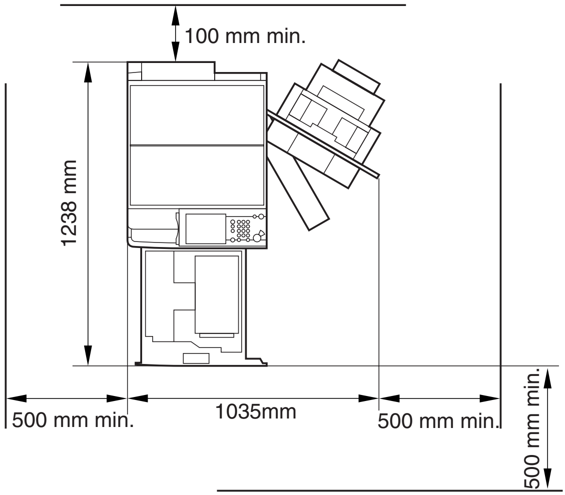
ammonium gas.

If the area is exposed to direct rays of the sun, provide curtains to the window.

4) The room must be well ventilated. (The level of ozone generated by the machine in use will not affect the individuals around it. However, some may find its odor to be unpleasant, as when working in a poorly ventilated room.)

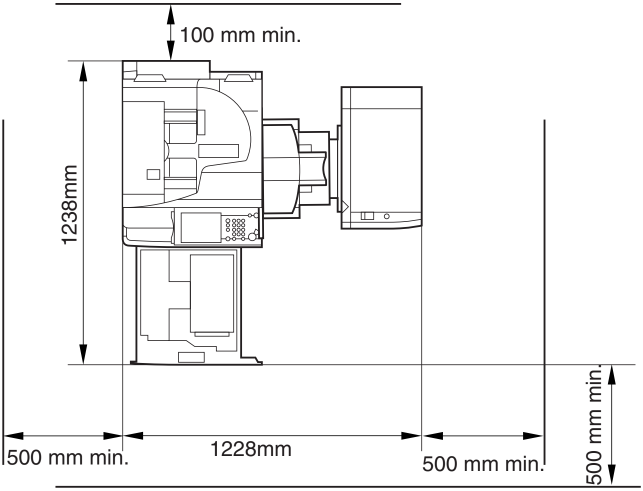
5) The floor of the machine must be level so that the feet of the machine will remain in contact and the machine will remain level.

6) The machine must be at least 10 cm away from any wall, permitting unobstructed use.



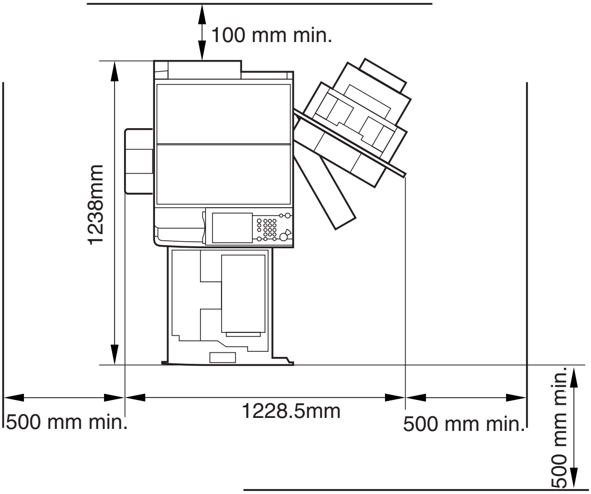
F-2-2

Without a Finisher or Side Paper Deck-P1 Installed


100 mm min.
1238mm
500 mm min.
1228mm
500 mm min.
500 mm min.

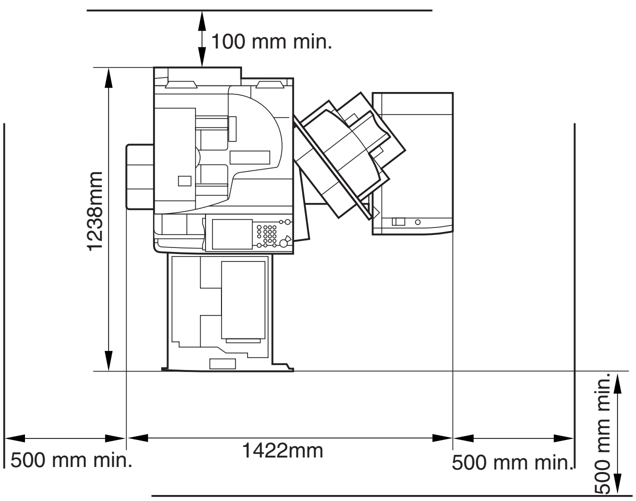
F-2-3

With the Side Paper Deck-Q1 Installed


100 mm min.
1238mm
500 mm min.
1228.5mm
500 mm min.
500 mm min.

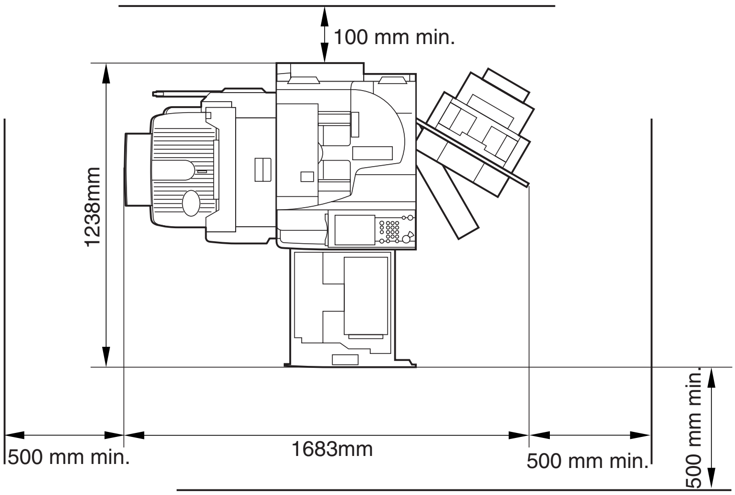
F-2-4

With the Finisher-P1 Installed


100 mm min.
1238mm
500 mm min.
1422mm
500 mm min.
500 mm min.

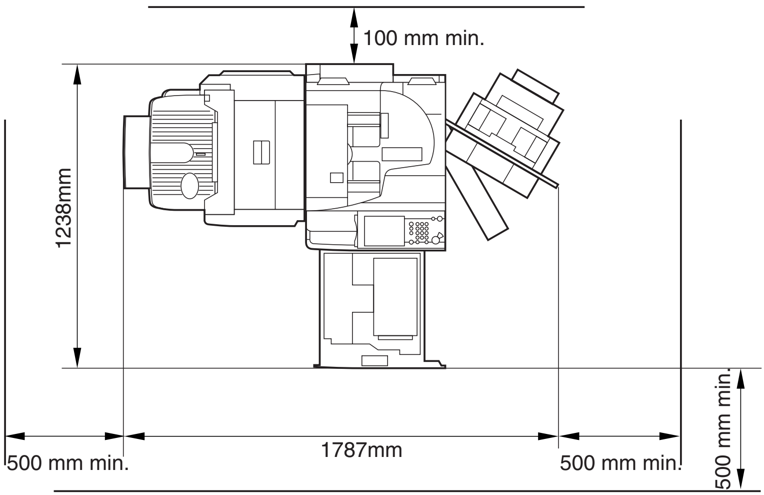
F-2-5

With the Side Paper Deck-Q1 and Finisher-P1 Installed


100 mm min.
1238mm
500 mm min.
1683mm
500 mm min.
500 mm min.

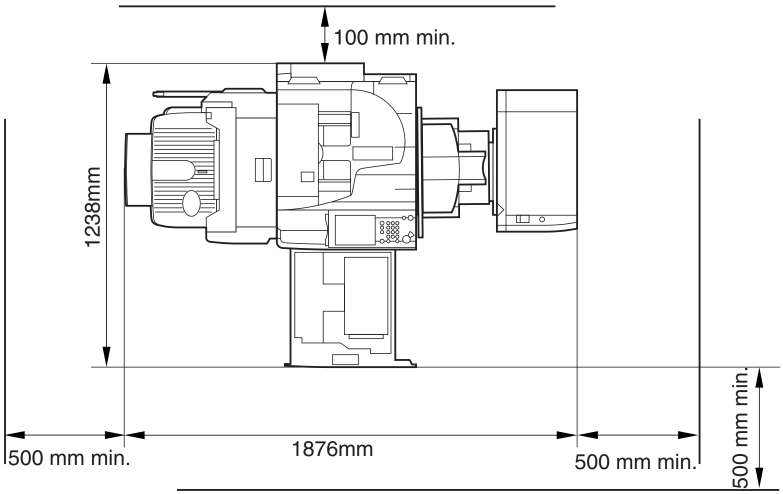
F-2-6

With the Finisher-Q1 Installed


100 mm min.
1238mm
500 mm min.
1787mm
500 mm min.
500 mm min.

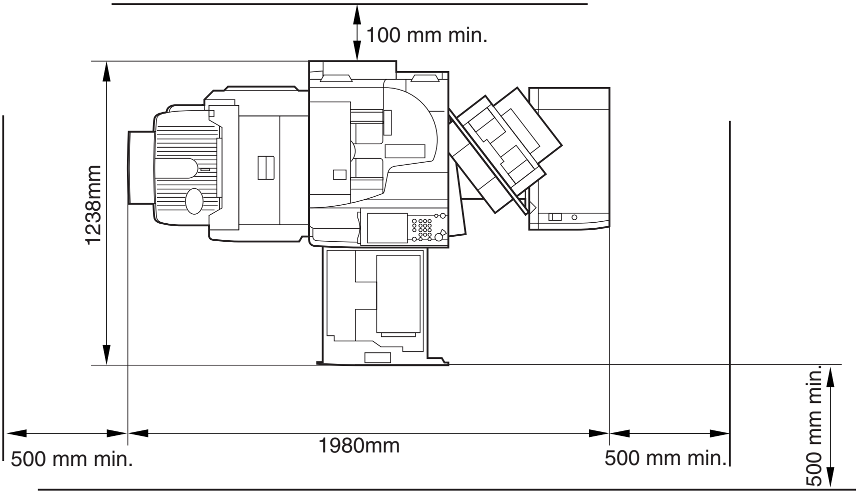
F-2-7

With the Saddle Finisher-Q2 Installed


100 mm min.
1238mm
500 mm min.
1876mm
500 mm min.
500 mm min.

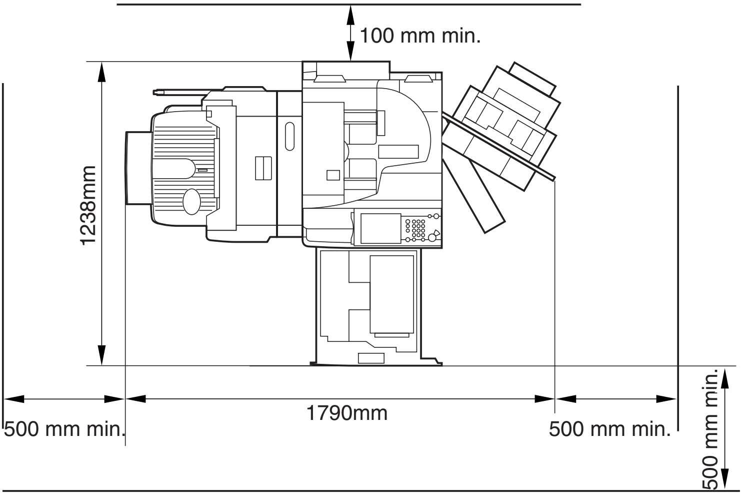
F-2-8

With the Side Paper Deck-Q1 and Finisher-Q1 Installed


100 mm min.
1238mm
1980mm
500 mm min.
500 mm min.
500 mm min.

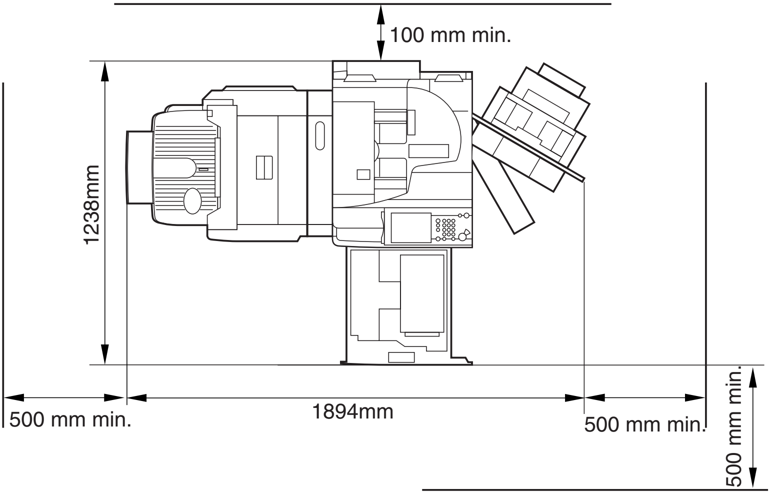
F-2-9

With the Side Paper Deck-Q1 and Saddle Finisher-Q2 Installed


100 mm min.
1238mm
1790mm
500 mm min.
500 mm min.
500 mm min.

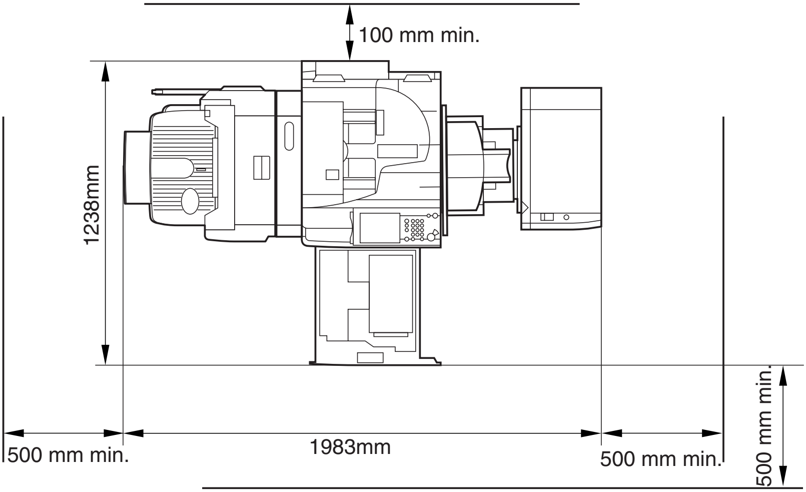
F-2-10

With the Finisher-Q1 and Puncher Unit-L1/M1/N1/PI Installed


100 mm min.
1238mm
500 mm min.
1894mm
500 mm min.
500 mm min.

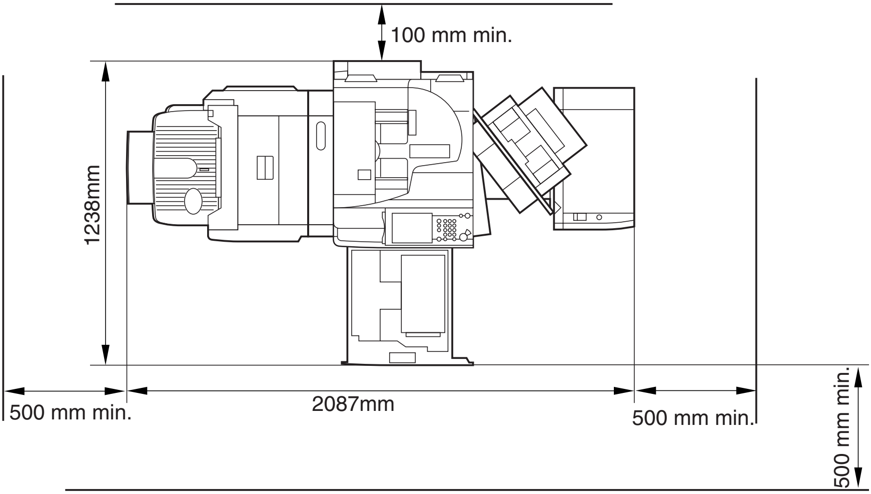
F-2-11

With he Saddle Finisher -Q2 and Paper Deck Unit-L1/M1/N1/PI Installed


100 mm min.
1238mm
500 mm min.
1983mm
500 mm min.
500 mm min.

F-2-12

With the Side Paper Deck-Q1, Finisher-Q1, and Puncher Unit-L1/M1/N1/P1 Installed



F-2-13

With the Side Paper Deck-Q1, Saddle Finisher-Q2, and Puncher Unit-L1/M1/N1/P1 Installed

7) The machine must be placed in a well ventilated area. It is important to make sure, however, that the machine is not near the air vent (for suction) of the room.

2.1.2 Check to Make Before Installation

1-1 Points to Note

Keep the following in mind concerning the installation of the machine:

1) If you are moving the machine from a cold to warm place for installation, the machine can suffer condensation, causing image faults. If such is the case, leave the machine alone unpacked for at least 2 hr so that it is fully used to the temperature of the room before installation.

(The term "condensation" refers to the droplets of water on a metal surface when it is brought in from a cold to warm place, caused by rapid cooling of the vapor in the atmosphere by the cold metal.)

2) The machine weighs about 100 kg (max.; including the DADF). Be sure to work in a

group of 4 persons or more when lifting it.

1-2 Recording the Service Mode Settings

Be sure to record the service mode settings as instructed herein as part of the installation work. At the end of the work, check to be sure that the record shows all settings.

T-2-1

<Service Mode Label>

initial screen	Level 1 item	Level 2 item	Level 3 item	Check
COPIER	ADJUST	DENS	REF-Y	
			REF-M	
			REF-C	
			SGNL-Y	
			SGNL-M	
			SGNL-C	

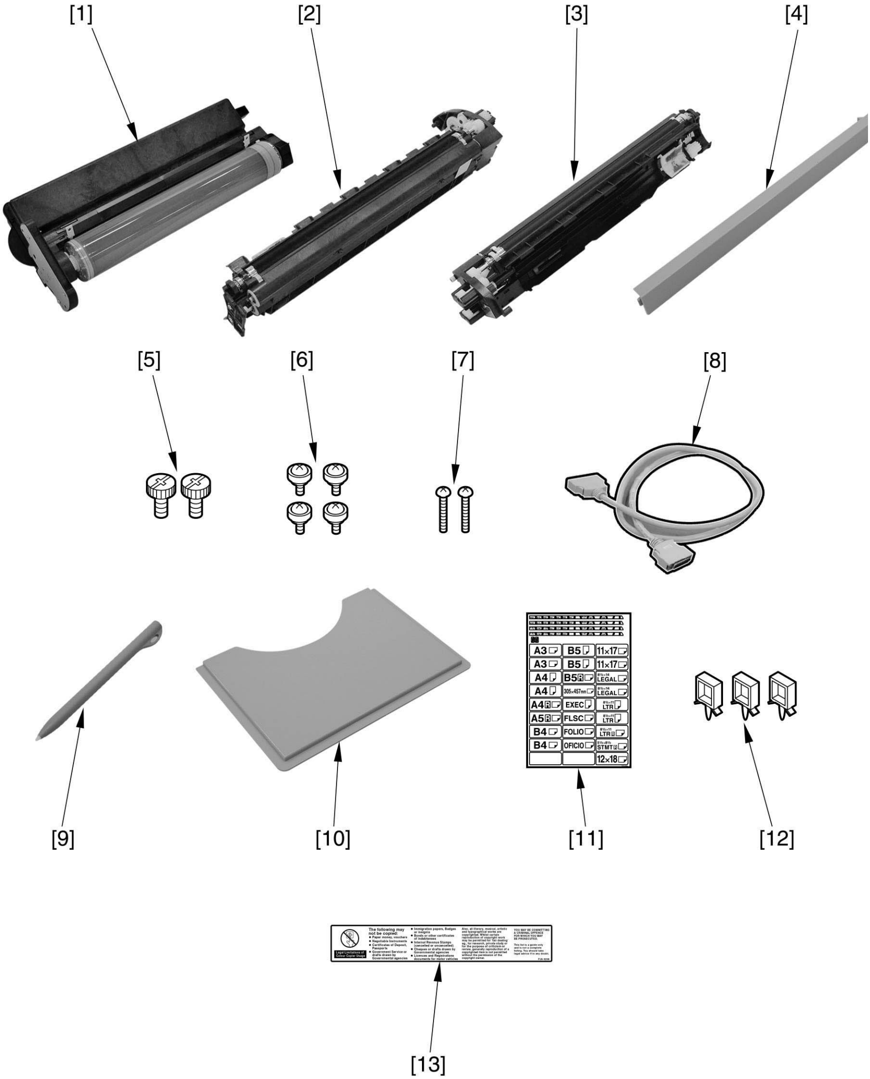
T-2-2

<Drum Counter Reading Label>

Initial screen	Level 1 item	Level 2 item	Level 3 item	Check
COPIER	ADJUST	HV-PRI	DR-I-INT	

1-3 Checking the Contents

Check to be sure that none of the following contents is missing:


[1]
[2]
[3]
[4]
[5]
[6]
[7]
[8]
[9]
[10]
[11]
[12]
[13]

F-2-14

T-2-3

[1]	Drum unit	1 pc.	[8]	Reader communication cable	1 pc.

[2]	Develping assembly(black)	1 pc.	[9]	Touch pen	1 pc.
[3]	Developing assembly (cyan, magenta, yellow)	1 pc. each	[10]	Service book case	1 pc.
[4]	Lower right over	1 pc.	[11]	Cassette size label	2 pc. *
[5]	Adjusting screw	2 pc.	[12]	Wire saddle	3 pc.
[6]	Developing assembly fixing screw (stepped)	4 pc.	[13]	Do Not Copy label	3 pc.
[7]	Drum unit fixing screw (M4x20; white)	2 pc.			

Memo:
The developing assembly fixing screws (stepped) may come together with or separately with their collars. If latter, be sure to put the screws with collars before use.

Check the documentation and CDs against the following table:

T-2-4

Operators manual: Reference guide
Operators manual: Copy guide
Operators manual: Box guide
Operators manual CD-ROM: NW/RUI
Main unit warranty card
Drum Warranty
Registration card (English)
Registration card (French)
Installation Check list
License agreement for software (JEFIG)

2.2 Unpacking and Installation

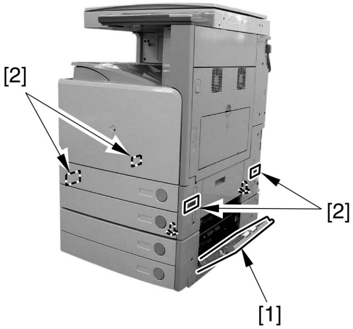
2.2.1 Unpacking and Removing the Fixing Materials

1) Unpack the machine, and remove the plastic covering.

- If you are installing a pedestal together with the machine, unpack it also.

2) If you are installing the machine on a Cassette Pedestal-Y1, open the right door [1] of the pedestal.

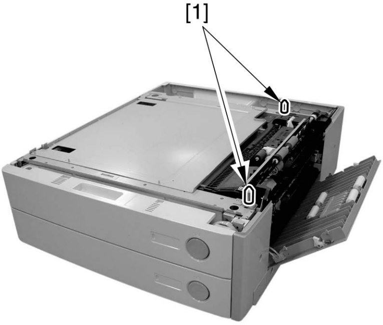
3) Working as a group of 4 persons, hold the grips [2], and place the machine on the pedestal.



F-2-15

⚠The machine weighs as much as 100 kg (including the DADF). Be sure always to work as a group of 4 persons when lifting it.

Memo:
When placing the machine on a cassette pedestal, be sure to match the 2 positioning pins [1] found on the top surface of the pedestal against the holes found in the base of the machine.



F-2-16

---

4) Close the right door of the pedestal (in the case of the 2-Cassette Pedestal-Y1).

5) Remove the fixing tape/fixing material from the individual parts.
- front door
- right door
- manual feed assembly
- cassette 1/2
- inside of cassette 1/2
- DADF (if found)

- copyboard glass

6) Push the cassette releasing button, and remove the cassettes 1 and 2.

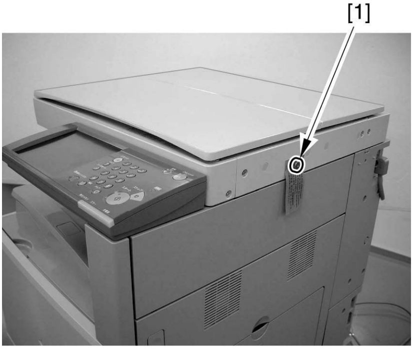
⚠Go through steps 6) through 8) only if you are installing the machine on a 2-Cassette Pedestal-Y1.

---

7) Join the machine and the pedestal using a screw [1]. The screw comes with the 2-Cassette Pedestal-Y1.

8) Slide the cassette 1 and 2 back in.

9) Remove the optical system fixing screw [1] from the outside of the reader unit right cover. (Store away the screw for possible future relocation of the machine.)

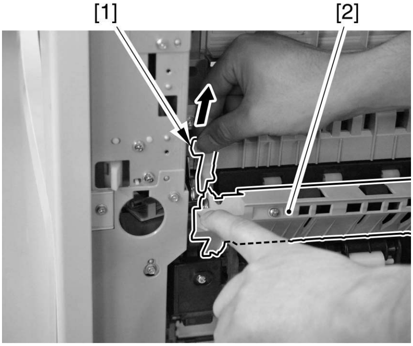


F-2-17

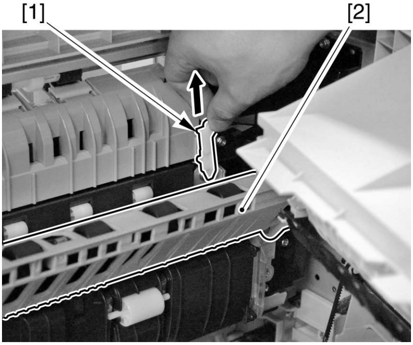
10) Open the right door.

11) Remove the 2 fixing assembly releasing rolls [1]. One roll is set on front side, another one roll is set rear side.

⚠When removing the fixing assembly releasing roll, be sure not to force down the jam guide [2] of the fixing assembly. Otherwise, the force can damage the jam guide of the fixing assembly.



F-2-18



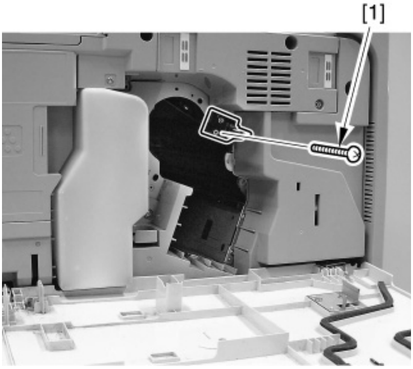
F-2-19

12) Close the right door.

2.2.2 Installing the Drum Unit

1) Open the front cover.

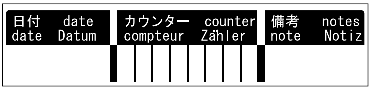
2) Remove the ITB releasing lever fixing screw (M3x20; black) [1].



F-2-20

3) Remove the wrapping from the drum unit.

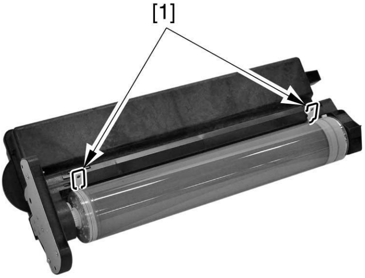
- Be sure to remove the drum protective sheet.
- The drum counter reading recording label comes with the drum protective sheet. Use it for the next step (i.e., initializing the drum unit).



日付 date date Datum	カウンター counter compteur Zähler	備考 notes note Notiz

F-2-21

4) Remove the 2 charging roller releasing rolls [1] of the drum unit.

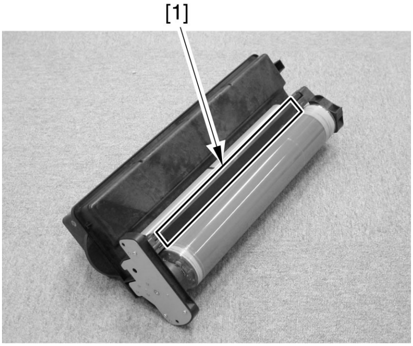


F-2-22

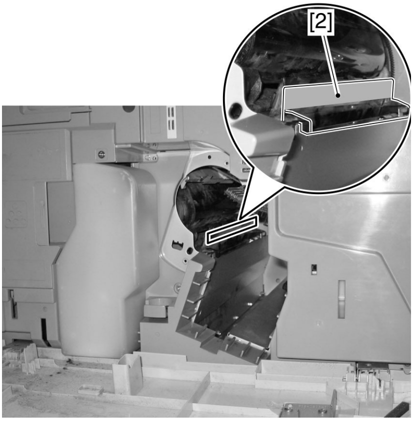
⚠Be sure not to touch or damage the surface of the photosensitive drum in the drum unit.

---

5) Check to see if there is a build-up of dust in the area [1] of the drum unit and the area [2] of the optical hood. As needed, clean the areas with a cloth moistened with water.



F-2-23



F-2-24

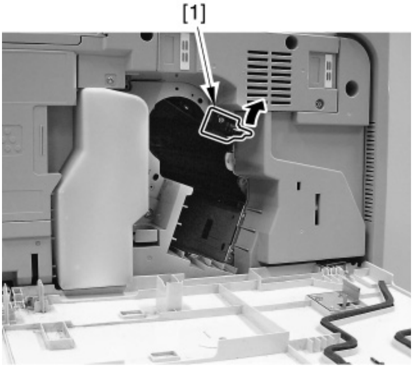
⚠Do not dry wipe the area. Otherwise, static charges will build up to attract dust.

Memo:

The laser light moves through the area between [1] and [2] of the figure to reach the photosensitive drum. The presence of dust in the area will block some of the light, thus causing white lines in the images.

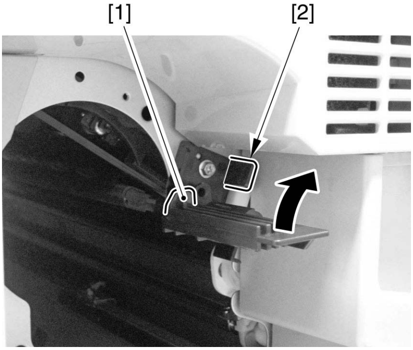
---

6) Turn the ITB releasing lever [1] clockwise until it becomes locked, thereby releasing the ITB.



F-2-25

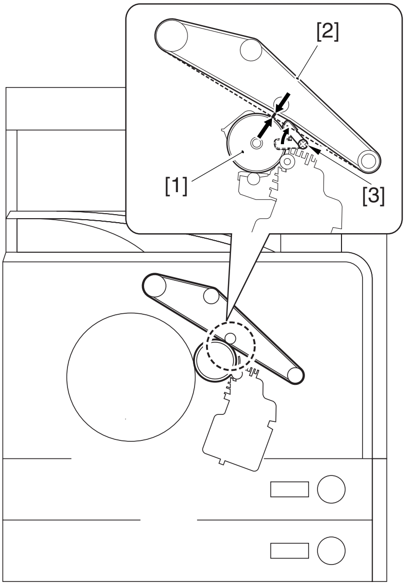
⚠A protrusion is found on the back of the ITB releasing lever [1]. The ITB releasing lever becomes locked in place when it is turned until the protrusion has ridden over the stopper [2].



F-2-26

⚠The photosensitive drum [1] and the

ITB [2] are in contact, and turning the ITB releasing lever clockwise will cause the releasing member [3] (operating in conjunction with the lever) to push up the ITB [2], thereby moving the ITB [2] away from the photosensitive drum [1].



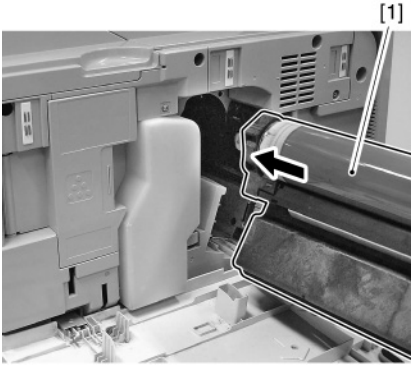
F-2-27

At this time, the ITB is slack temporarily. If left as it is for a long time, however, the ITB can suffer deformation. Be sure to limit the time during which the ITB remains slack.

---

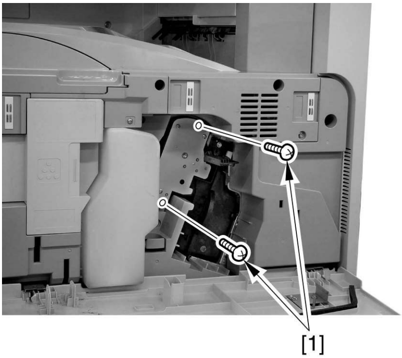
7) Fit the drum unit [1] in the machine.

⚠When fitting the drum unit in the machine, be sure to hold it level and move it until it butts against the rear of the machine. If moved at an angle, the photosensitive drum can interfere with components inside the machine to damage them.



F-2-28

8) Fix the drum unit in place using the 2 drum unit fixing screws (M4x20; white) [1].

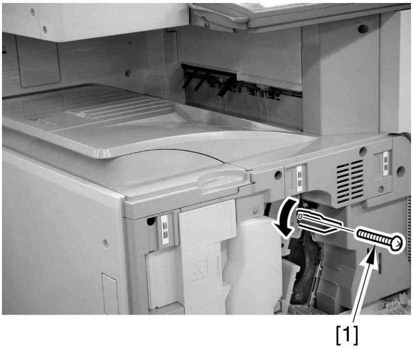


F-2-29

9) Turn the ITB releasing lever

counterclockwise.

10) Fix the ITB releasing lever in place using the ITB releasing lever fixing screw (M3x20; black) [1].



F-2-30

2.2.3 Preparing for the Mounting of the Developing Assembly

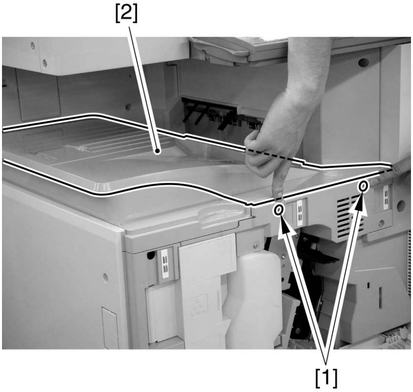
⚠When turning the rotary by hand, take care not to touch the rotating area.

---

1) Loosen the 2 screws [1], and detach the delivery tray [2].

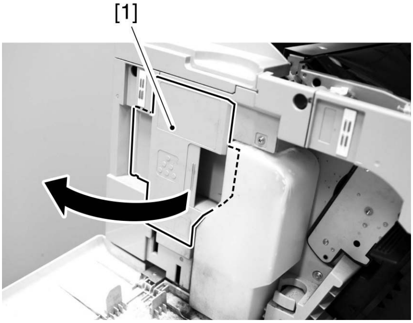
⚠

1. Take care not to damage the transfer belt by the rib found on the back of the delivery tray.
2. Take care not to hit the delivery sensor flag against the tray to break it.
3. Detaching the delivery tray will expose the ITB. If you must detach it for the work, be sure to take full care not to touch the belt.



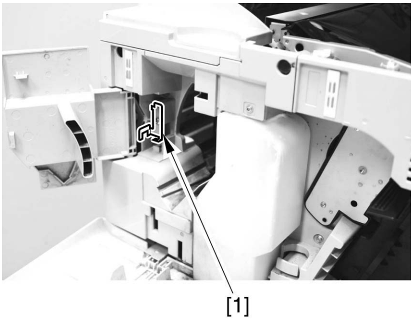
F-2-31

2) Open the toner cartridge access cover [1].



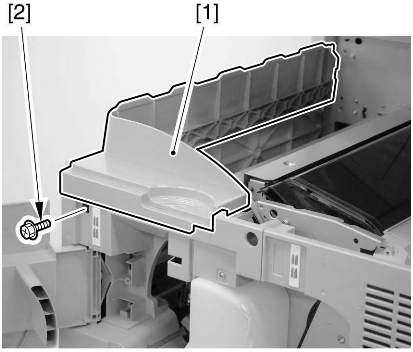
F-2-32

3) Remove the rotary lock fixing [1] (1 self-tapping screw).



F-2-33

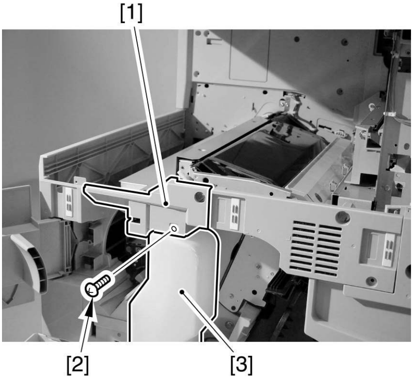
4) Remove the delivery tray lower cover [1] (1 screw [2]).



F-2-34

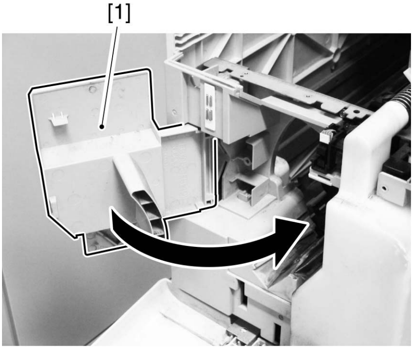
5) Remove the waste toner bottle retainer [1]. (1 TP screw [2])

6) Detach the waste toner bottle [3].



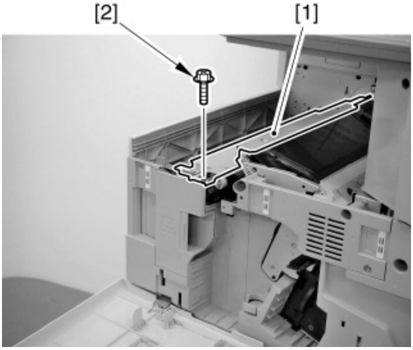
F-2-35

7) Close the toner cartridge access cover[1].



F-2-36

8) Remove the protective plate [1]. (1 screw [2])

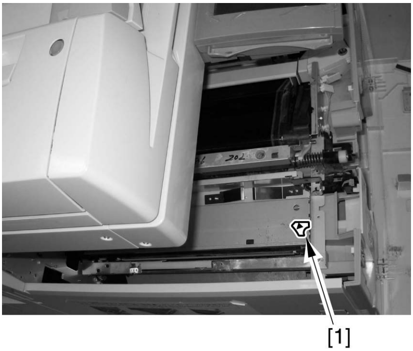


F-2-37

⚠Take care not to touch the ITB while detaching the part.

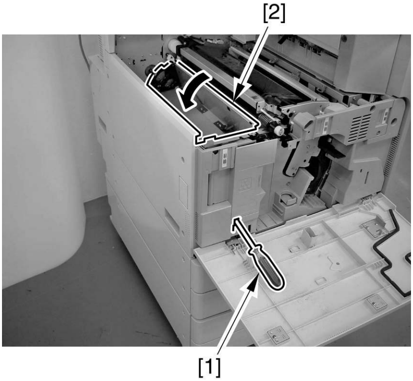
9) Turn the rotary to the point of replacement for the cyan developing assembly as follows:

Memo:
A colored marking is used to identify the point of replacement for cyan, yellow, and magenta. There is no label, however, for the black developing assembly.



F-2-38

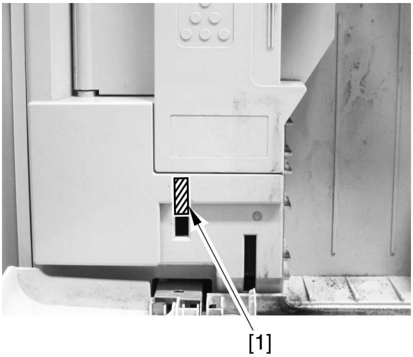
9-1) While unlocking the rotary using a screwdriver [1], turn the rotary [2] counterclockwise by hand until it is near the point of replacement for cyan.



F-2-39

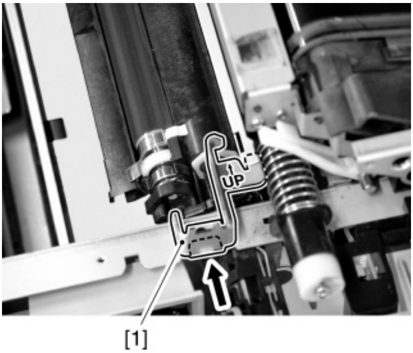
Memo
Positioning a Screwdriver
To help free the rotary lock, try inserting a screwdriver by positioning it as follows (2/

3 of the angular hole).

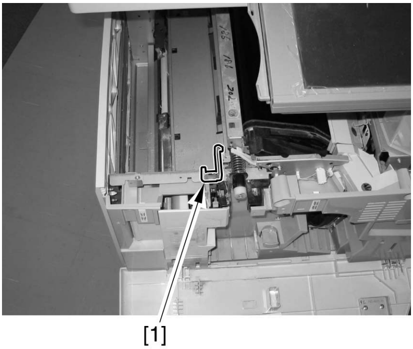


F-2-40

9-2) Fix the rotary in place to the front side plate using the rotary fixing [1]. Be sure that the marking UP of the rotary fixing [1] faces upward. The rotary fixing is the one removed in the foregoing step "Preparing for the Mounting of the Developing Assembly."



F-2-41



F-2-42

⚠Mount the developing assemblies strictly in the following order:

1. cyan
2. black
3. yellow
4. magenta

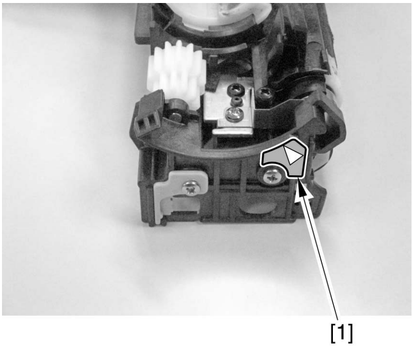
Otherwise, the weight of the rotary can cause it to rotate unexpectedly.

2.2.4 Mounting the Cyan Developing Assembly

1) Make a cut in the package bag of the cyan developing assembly with scissors, and take out the developing assembly.

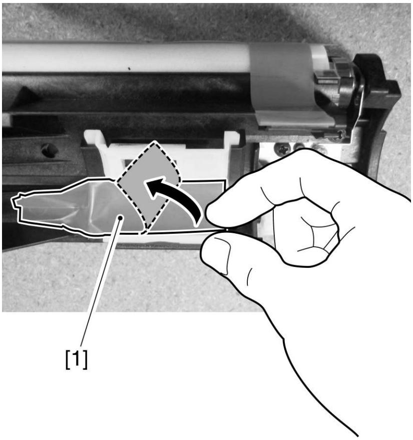
Memo:

To check the color of the toner inside a developing assembly, refer to the color of the label attached to the front of the developing assembly.
The packaging bag is transparent; be user to check the color of the label [1] before opening it.



F-2-43

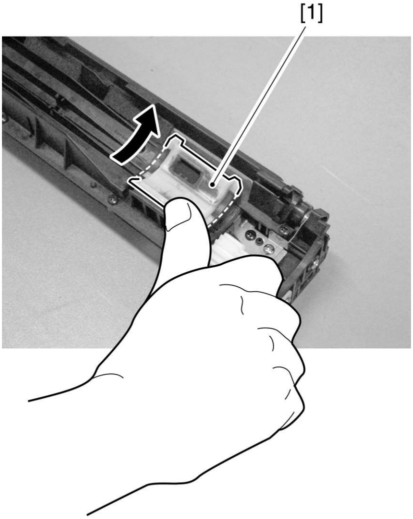
2) Remove the tape [1] used on the toner shutter.



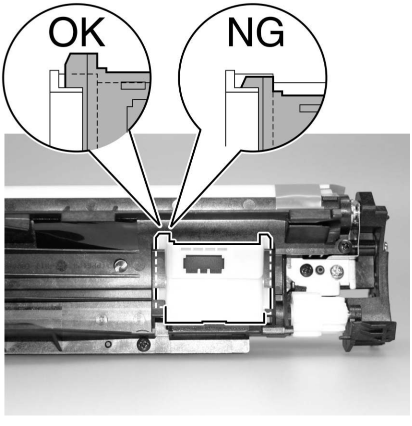
F-2-44

3) Check to see that the toner shutter [1] is fitted all the way in the direction of the arrow in the figure. Otherwise, move it in the direction of the arrow unit it stops.

- if the butting is not adequate, the toner cartridge may not settle in place.
- if the butting is not adequate, toner leakage may occur.

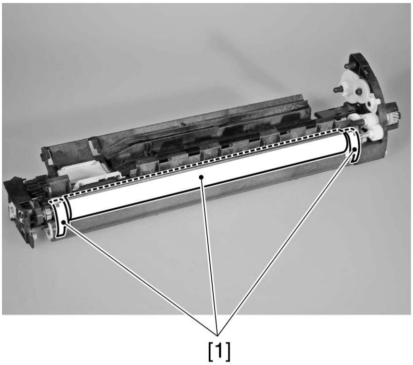


F-2-45



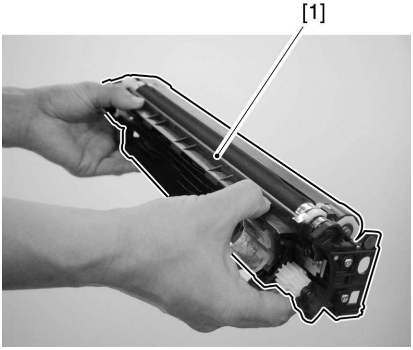
F-2-46

4) Remove the protective sheet [1] used to cover the developing cylinder.



F-2-47

5) Hold the cyan developing assembly [1] as shown in the figure.



F-2-48

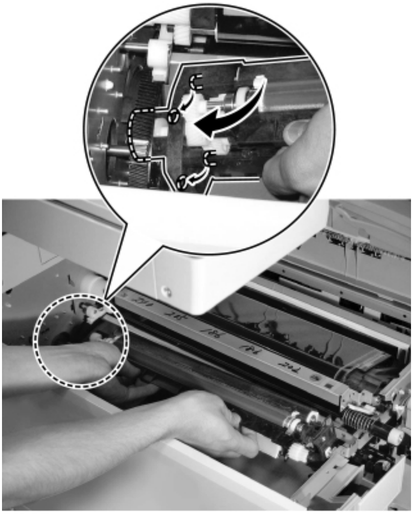
⚠Do not touch the sleeve surface.

---

6) Fit the cyan developing assembly [1] in the rotary.

- Be sure to set the rear of the developing assembly at an angle.

Memo:
Fit the gear and the protrusion of the developing assembly in the hole of the rotary flange (rear).

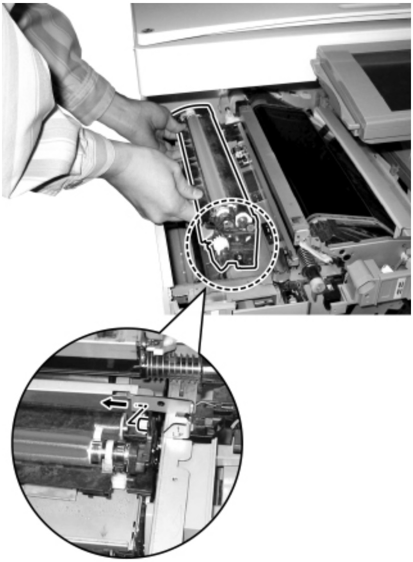


F-2-49

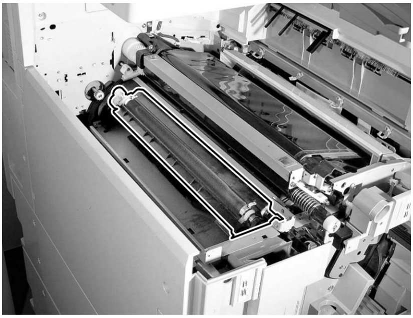
- Set the front of the developing assembly in the rotary.

⚠When fitting the developing assembly, take care not to bring the developing assembly into contact with the rotary fixing. Otherwise, the rotary fixing can become displaced.

Memo:
Fit the protrusion of the developing assembly in the hole of the rotary flange (front). For a better view of the protrusion of the developing assembly, stand to the left of the machine's front.

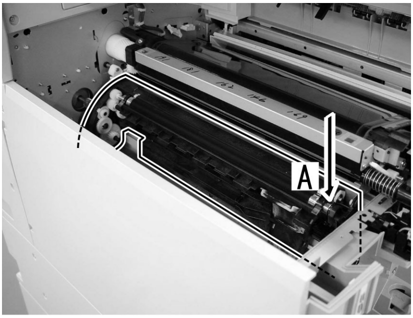


F-2-50

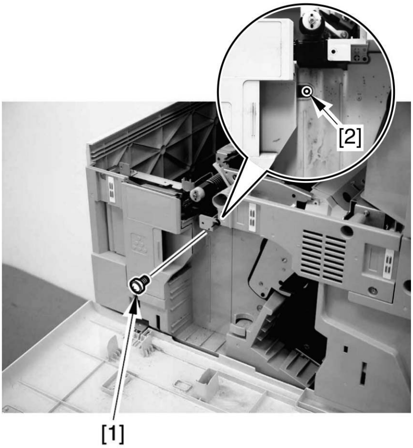


F-2-51

7) While pushing the cyan developing assembly in the direction of the arrow A, fix it in place using the included developing assembly fixing stepped screw [1] (screw hole [2]).



F-2-52



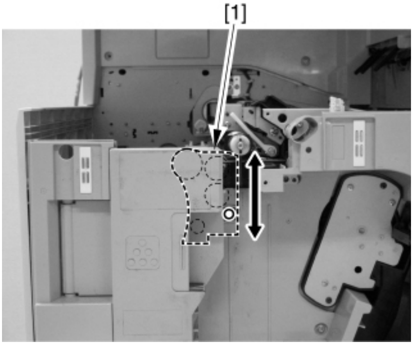
F-2-53

Memo:

If the developing assembly fixing stepped screw came separately with its collar, be sure to put them together before use.

---

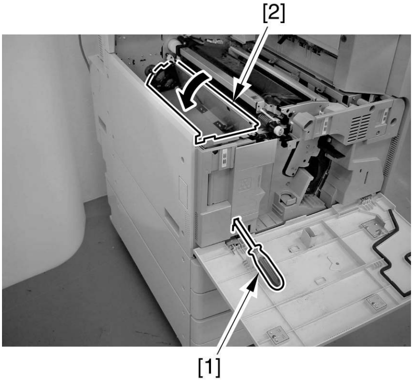
8) Check to make sure there is play of about 1.5 to 2 mm in up/down and right/left directions of the cyan developing assembly [1]. If not, the developing assembly fixing stepped screw may be failing to force the developing assembly correctly. Loosen the developing assembly fixing stepped screw once, and tighten it back.



F-2-54

9) Remove the rotary fixing.

10) While freeing the rotary lock using a screwdriver [1], turn the rotary [2] counterclockwise by hand until it is near the point of replacement for black.

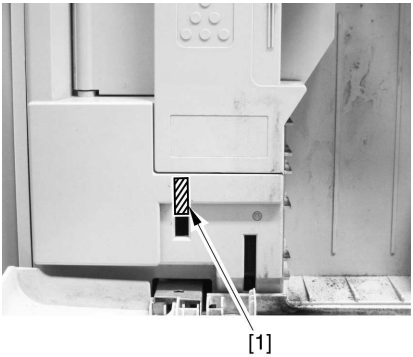


F-2-55

Memo

Positioning a Screwdriver

To help free the rotary lock, try inserting a screwdriver by positioning it as follows (2/3 of the angular hole).

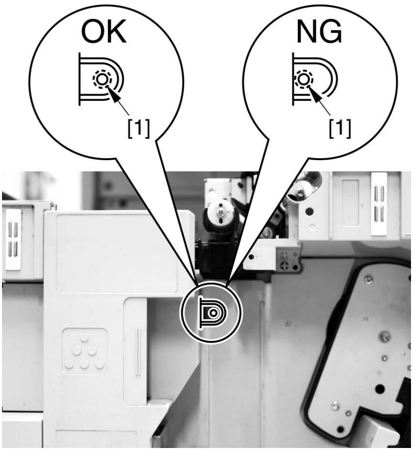


F-2-56

---

11) You need not use the rotary fixing to fix the rotary in place at the point of replacement for black; simply remove the screwdriver so that it will lock into place on its own. (In other word, the black developing assembly does not need a rotary fixing.)

⚠Check the position of the screw hole used to secure the black developing assembly to see if the rotary is locked correctly in position in relation to the black developing assembly. If not, start over.

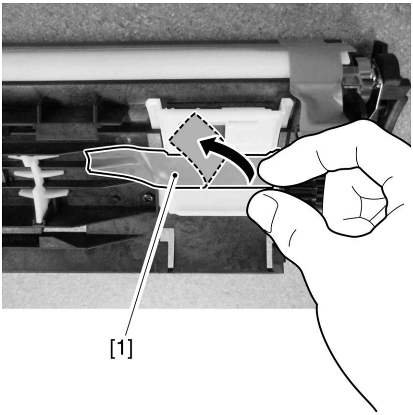


F-2-57

2.2.5 Mounting the Black Developing Assembly

1) Cut the packaging bag of the black developing assembly with scissors, and take out the developing assembly.

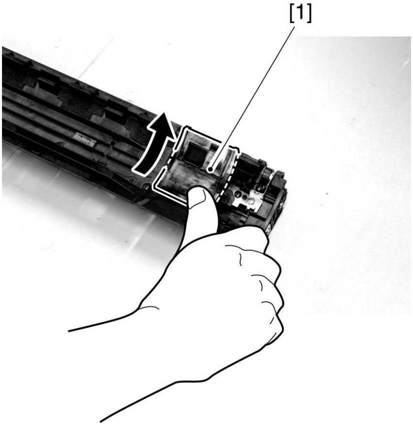
2) Remove the tape [1] used on the toner shutter.



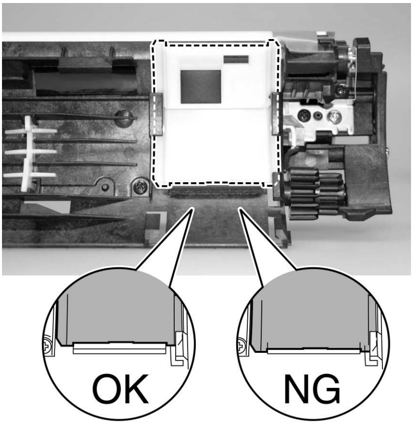
F-2-58

3) Check to make sure that the toner shutter [1] is fully butted in the direction of the arrows. If not, move the toner shutter [1] in the direction of the arrow until it is fully butted.

- if the butting is not adequate, the toner cartridge may not settle in place.
- if the butting is not adequate, toner leakage may occur.
- if the butting is not adequate, collection of waste toner (from auto carrier refresh) may fail, or the feedscrew/ sleeve used to move the toner may fail.

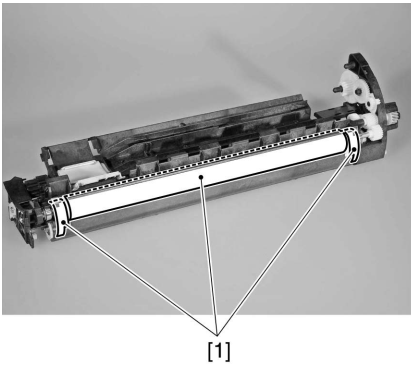


F-2-59



F-2-60

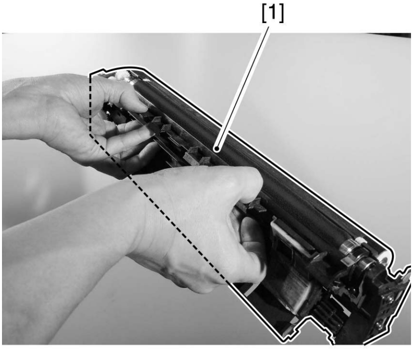
4) Remove the protective sheet [1] used to cover the developing cylinder.



F-2-61

5) Hold the black developing assembly [1] as shown.

⚠Take care not to touch the cylinder surface.

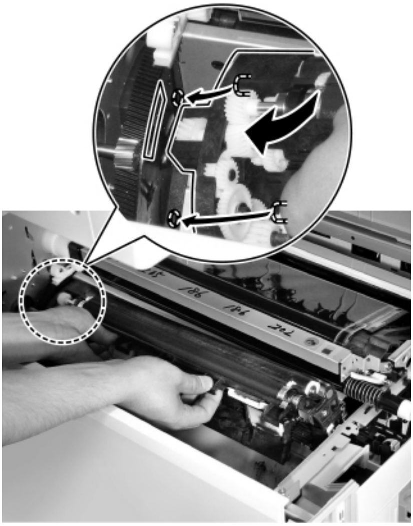


F-2-62

6) Fit the black developing assembly [1] in the rotary.

- Set the rear of the developing assembly in the rotary at an angle.

Memo:
Fit the gar and the protrusion of the developing assembly in the hole of the rotary flange (rear).

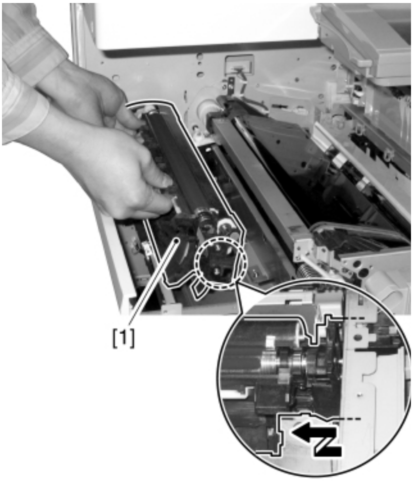


F-2-63

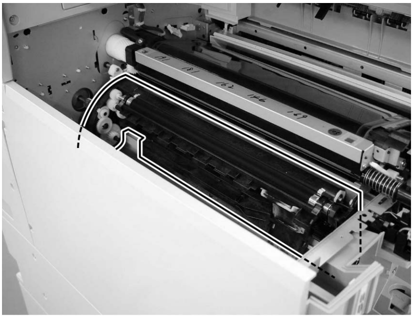
- Set the front of the developing assembly in the rotary.

⚠When fitting the developing assembly, take care not to bring the developing assembly into contact with the rotary fixing. Otherwise, the rotary fixing can become displaced.

Memo:
Fit the protrusion of the developing assembly into the hole of the rotary flange (front).

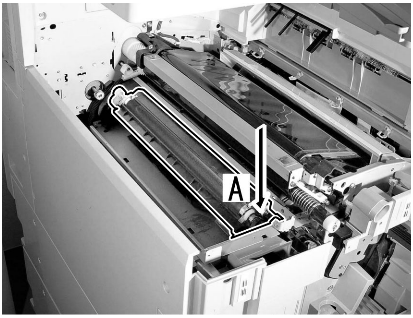


F-2-64

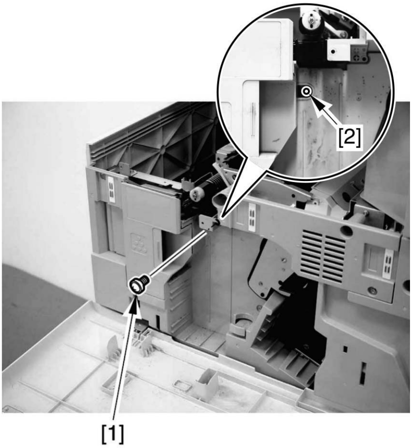


F-2-65

7) While pushing the developing assembly in the direction of the arrow A, fix it in place using the included black developing assembly fixing screw [1] (screw hole [2]).



F-2-66

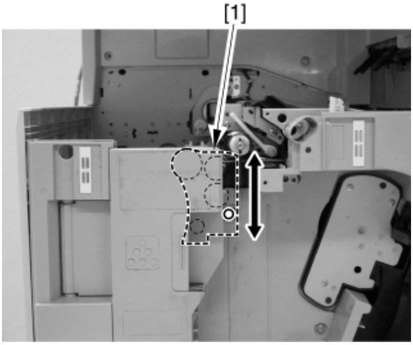


F-2-67

Memo:
If the developing assembly fixing screw came separately with its collar, be sure to put them together before use.

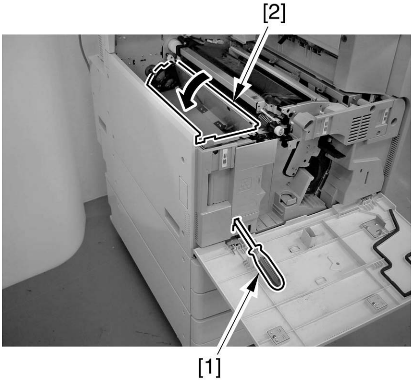
---

8) Check to see if there is play of about 1.5 to 2 mm in up/down and left/right directions of the black developing assembly [1]. If not, the developing assembly fixing screw may not be pushing the developing assembly correctly. Loosen the developing assembly fixing stepped screw once, and tighten it back.



F-2-68

9) While freeing the rotary using a screwdriver [1], turn the rotary [2] counterclockwise by hand until it is near the point of replacement for yellow.

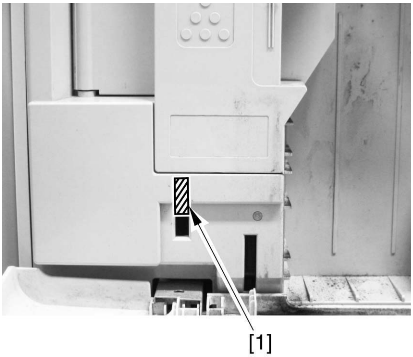


F-2-69

Memo

Positioning a Screwdriver

To help free the rotary lock, try inserting a screwdriver by positioning it as follows (2/3 of the angular hole).

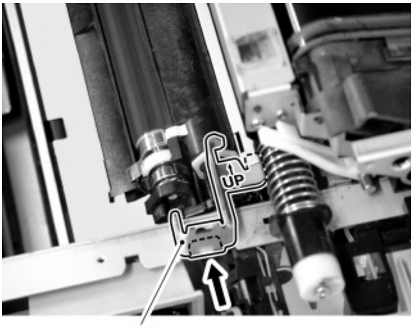


F-2-70

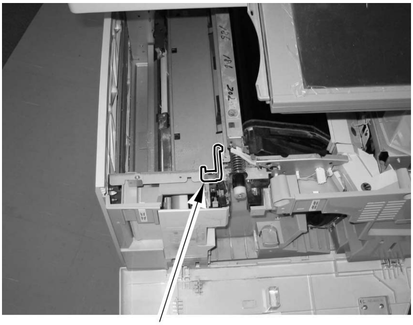
---

10) Fix the rotary in place to the front plate using the rotary fixing [1]. Be sure that

the marking "UP" on the rotary fixing [1] faces upward.



F-2-71



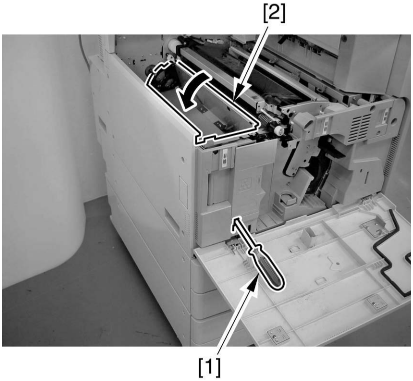
F-2-72

2.2.6 Mounting the Yellow Developing Assembly

Perform steps 1) through 9) shown for installing the cyan developing assembly for the yellow developing assembly.

Thereafter, perform the following steps to fix the rotary in place for magenta:

1) While keeping the rotary unlocked using a screwdriver [1], turn the rotary counterclockwise by hand so that it is positioned near the point of magenta replacement.

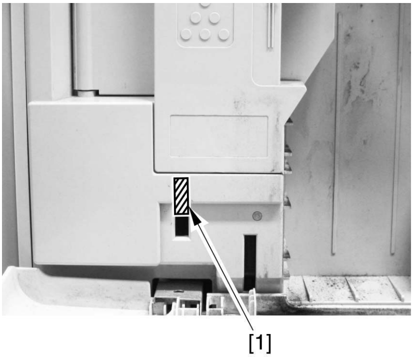


F-2-73

Memo

Positioning a Screwdriver

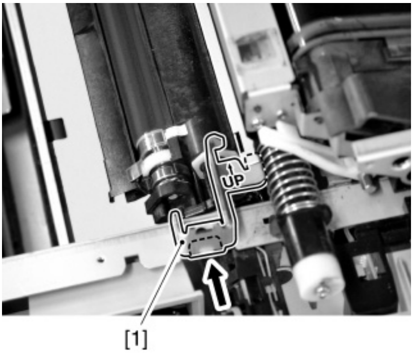
To help free the rotary lock, try inserting a screwdriver by positioning it as follows (2/3 of the angular hole).



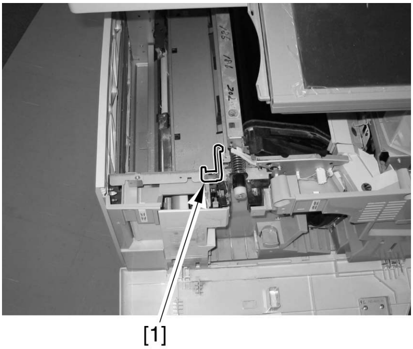
F-2-74

---

2) Fix the rotary in place to the front plate using the rotary lock fixing [1]. Be sure that the UP marking on the rotary lock fixing [1] faces upward.



F-2-75



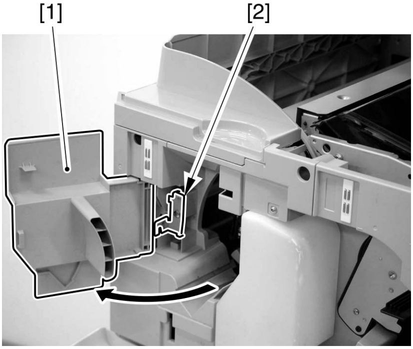
F-2-76

2.2.7 Mounting the Magenta Developing Assembly

Perform steps 1) through 9) under "Mounting the Cyan Developing Assembly" for the magenta developing assembly.

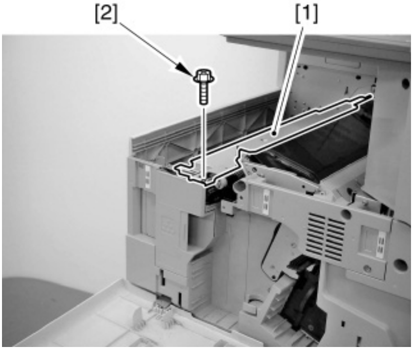
2.2.8 After Mounting the Developing Assembly

1) Open the toner cartridge access cover [1], and fit the rotary fixing [2]. (1 self-tapping screw).



F-2-77

2) Fit the protective plate [1]. (1 screw [2])



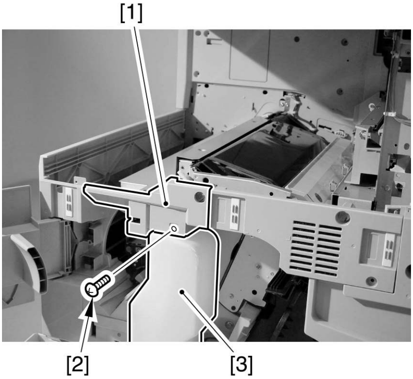
F-2-78

Take care not to touch the ITB while attaching the part.

---

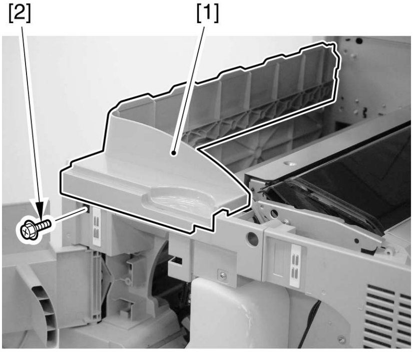
3) Fit the waste toner bottle [3].

4) Fit the waste toner bottle retainer [1]. (1 TP screw [2])



F-2-79

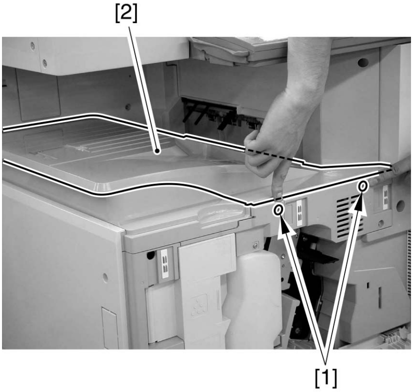
5) Mount the delivery tray lower cover [1]. (1 screw [2])



F-2-80

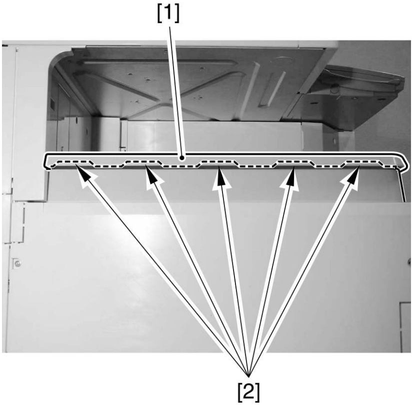
6) Close the toner cartridge access cover.

7) Mount the delivery tray [2], and tighten the 2 screws [1].



F-2-81

⚠Be sure that the delivery tray [1] covers the rib area [2] of the delivery tray lower cover.



F-2-82

8) Close the front cover.

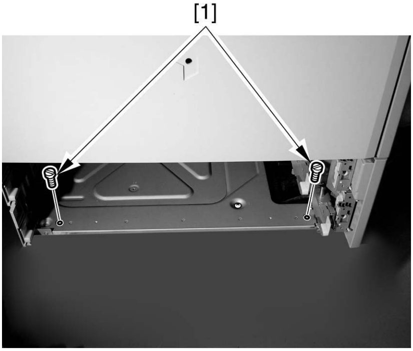
2.2.9 Fixing the Machine in Place

- If a Pedestal Is Used

1) Move the machine to its permanent position, and fix it in place using the 4 adjusters of the pedestal.

- If No Pedestal Is Used

1) Take out the cassettes 1 and 2, and temporarily tighten the adjusting screw [1] on the base plate of the machine (with the foot of the adjusting screw lightly in contact).

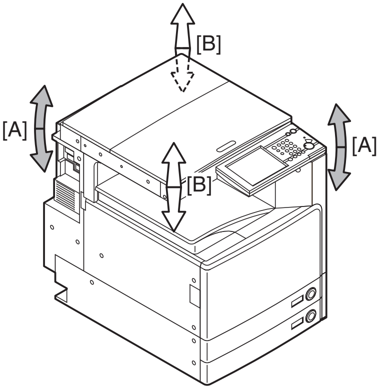


F-2-83

2) Check the table or the floor to see that the machine will not wobble; if it does, tighten the adjusting screw to stop it as follows:

- if it moves in the direction of the arrow A, tighten the screw on the right in the figure.
- if it moves in the direction of the arrow B,

tightened the screw on the left in the

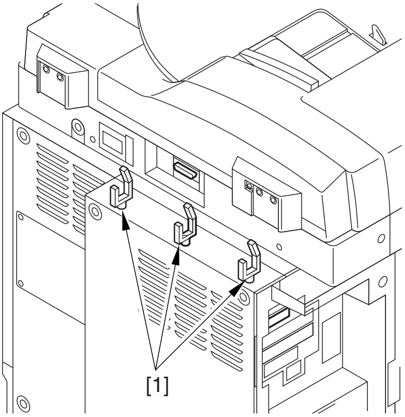


F-2-84

4) Put back the cassettes 1 and 2.

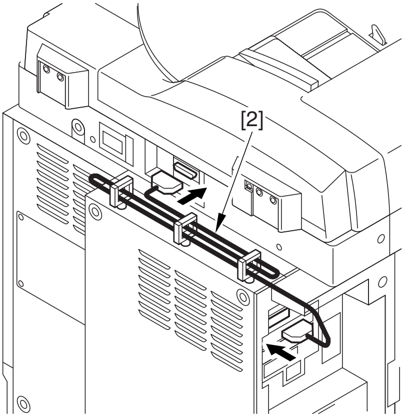
2.2.10 Connecting the Cable

1) Fit the 3 wire saddles [1] to the rear cover (right) of the printer unit.



F-2-85

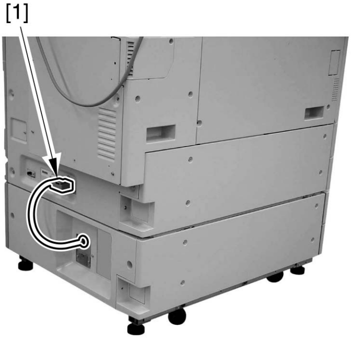
2)Fit the reader communication cable [2] to the reader printer. Bundle the cable using the wire saddles as shown, and be sure to push the connectors on both ends of the cable until a click is felt.



F-2-86

3) If you are installing a cassette pedestal, remove the lattice connector cover, and

fit the lattice connector [1] of the cassette pedestal to the machine.



F-2-87

4) Connect the power plug to the power outlet.

⚠

1. Power supply voltage shall be +/-10% of the rating.
2. The amperage of the power supply must be as rated.
3. Before connecting the power plug, check to be sure that the main power switch is off.

---

5) Turn on the main power switch.

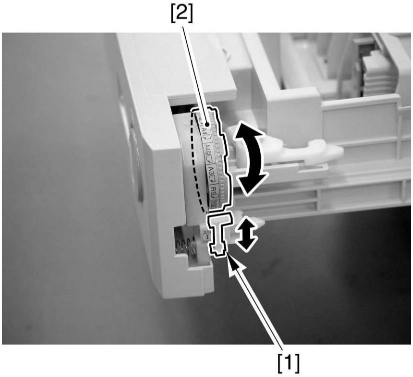
- The machine issues a message to indicate that it is loading programs.
- The machine issues a message to indicate that its printer is getting ready for a job.
- In about 6 min, the machine issues a message to indicate that it is checking the network settings.
- Be sure to set up the cassette before the machine completes its warm-up period. (For instructions, see "Setting Up the Cassette.")

2.2.11 Setting Up the Cassette

1) Press the cassette release button, and slide out the cassette to the front.

2) Check the type of paper that the user uses, check to see that the size configuration switch [1] of the cassette is set to the paper size. As necessary, change the switch position.

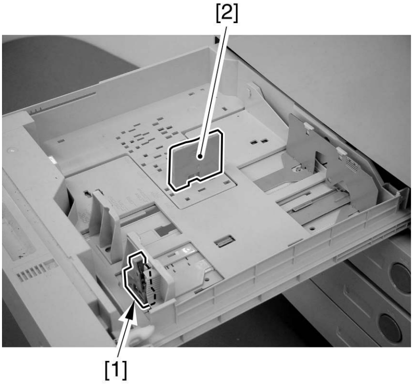
3) Set the paper size dial [1] to suit the size of the paper in question.



F-2-88

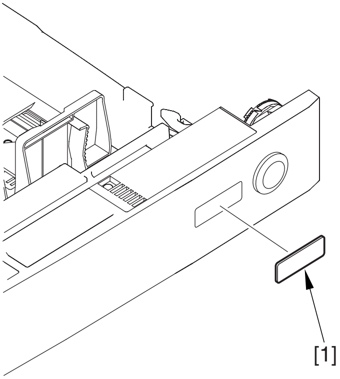
4) Pick the lever [1] of the side guide plate, and move the side guide plate to the desired position.

5) Push the trailing edge guide plate [2] to the right to detach. Mach the trailing edge guide plate against a specific size index found on the cassette bottom.



F-2-89

6) Attach the cassette size label [1] that matches the selected size of paper to the front of the cassette.



F-2-90

7) Deposit paper in the cassette; then, slide in the cassette.

8) Perform the same for the other cassette.

9) If a cassette pedestal is used, set it by referring to its Installation Procedure.

2.2.12 Mounting the Toner Cartridge

⚠If the developing rotary fails to stop at an appropriate position and thus prevents mounting of a toner cartridge, move it as follows before attempting to set the toner cartridge:

1) Check to see that the screen indicates [ready].

2) Make the following selections, and press [OK]: COPIER>FUNCTION>MISC-P>DEV-DR-Y/M/C/K (select the desired color).

3) Check to see that the message has changed from [service] to [ready]; then, open the front cover and the toner cartridge access cover, and mount the toner cartridge in question.

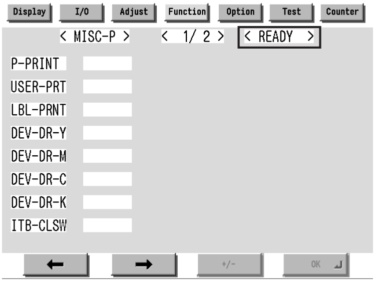
---

1) Take out the toner cartridge from its packaging bag.

2) When the machine has completed its warm-up period, start service mode by pressing the Additional Function key, the 2 and 8 keys at the same time, and then the Additional Function key once again.

3) Mount the yellow toner cartridge as follows:

3-1) Make the following selections: COPIER>FUNCTION>MISC-P>DEV-DR-Y. Then, check to see that the screen indicates [ready], and press [OK]. Check to see that the developing rotary moves to the point of replacement for the yellow toner cartridge.

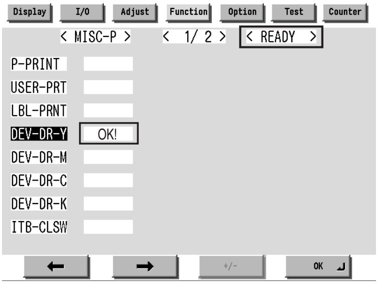


< MISC-P > < 1/ 2 > < READY >

P-PRINT
USER-PRT
LBL-PRNT
DEV-DR-Y
DEV-DR-M
DEV-DR-C
DEV-DR-K
ITB-CLSW

F-2-91

3-2) Check to see that the screen indicates [OK!] and [ready]; then, open the front cover and the toner cartridge access cover.

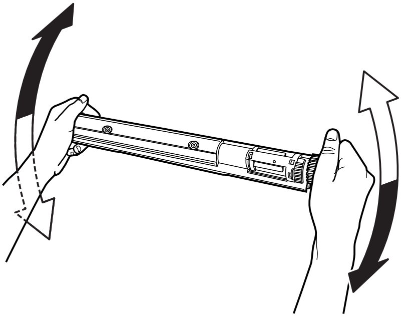


< MISC-P > < 1/ 2 > < READY >

P-PRINT
USER-PRT
LBL-PRNT
DEV-DR-Y OK!
DEV-DR-M
DEV-DR-C
DEV-DR-K
ITB-CLSW

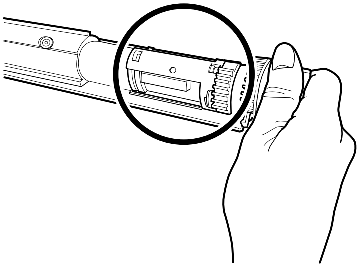
F-2-92

3-3) Hold the toner cartridge as shown with both your hands, and move it to and for about 5 times so as to turn over the toner inside it.



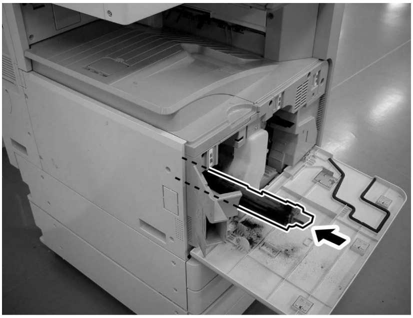
F-2-93

⚠When moving the toner cartridge, take care not to touch the shutter area or turn the knob; otherwise, the toner may start to leak.



F-2-94

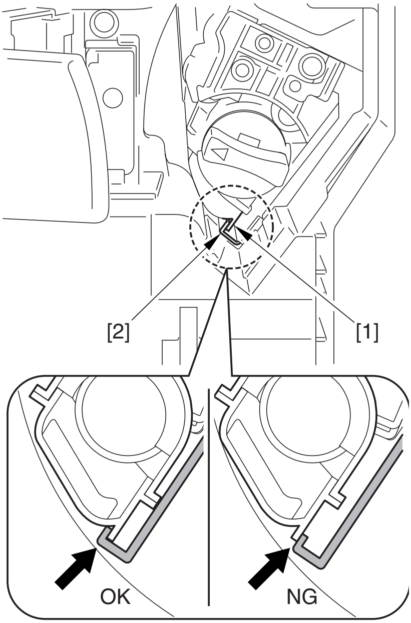
3-4) Keep the toner cartridge so that its side with 2 arrows face upward; then, fit it into the machine in the direction of the arrow.



F-2-95

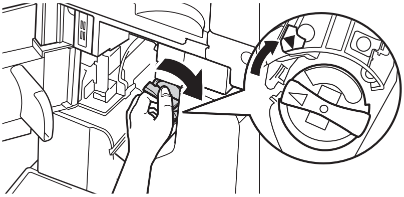
⚠When fitting the toner cartridge into the printer unit, be sure that the guide [1] of the toner cartridge is inside the bend on the rail [2] of the rotary assembly.

Check to be sure that the guide [1] of the toner cartridge has not ridden over the rail [2] of the rotary when it is fitted into the printer unit; otherwise, the machine may suffer leakage of toner.



F-2-96

3-5) Turn the knob of the toner cartridge clockwise until it stops.



F-2-97

3-6) Close the toner cartridge access cover and the front cover.

4) Fit the magenta toner cartridge as follows:

4-1) Wait until the screen indicates

[ready].

4-2) Make the following selections, and press [OK]: COPIER>FUNCTION>MISC-P>DEV-DR-M. See that the developing rotary moves to the point of replacement for the magenta toner cartridge.

4-3) Check to see that the screen shows [OK!] and [ready]; then, mount the magenta toner cartridge as you did the yellow toner cartridge.

5) Mount the cyan toner cartridge as follows:

5-1) Wait until the screen indicates [ready].

5-2) Make the following selections, and press [OK]; COPIER>FUNCTION>MISC-P>DEV-DR-C. See that the developing rotary moves to the point of replacement for the cyan toner cartridge.

5-3) Check to see that the screen indicates [OK!] and [ready]; then, mount the cyan toner cartridge as you did the yellow toner cartridge.

6) Mount the black toner cartridge as follows:

Memo:

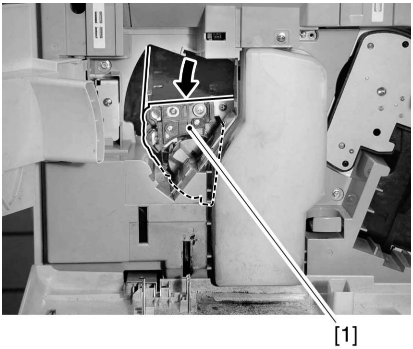
You need not shake the black toner cartridge before mounting it.

6-1) Wait until the screen indicates [ready].

6-2) Make the following selections, and press [OK]: COPIER>FUNCTION>MISC-P>DEV-DR-K. See that the developing rotary moves to the point of replacement for the black toner cartridge.

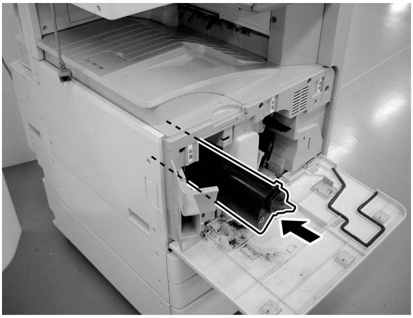
6-3) See that the screen indicates [OK!] and [ready]; then, open the front cover and the toner cartridge access cover.

⚠When the toner cartridge access cover is opened, the rotary [1] may not be at the point of cartridge replacement; if such is the case, turn it counterclockwise until the rotary is locked in position so that the black toner cartridge may be fitted in place.



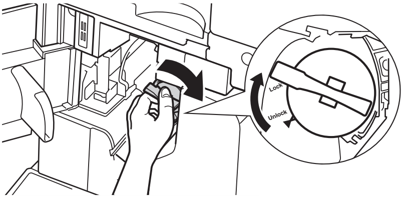
F-2-98

6-4) With the side of the toner cartridge indicating 2 arrows facing upward, slide the cartridge in the direction of the arrow.



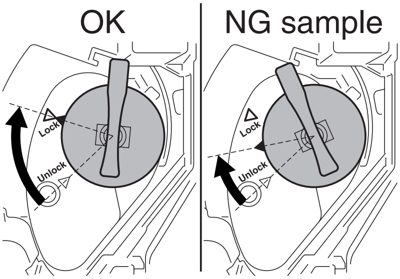
F-2-99

6-5) Turn the knob of the toner cartridge clockwise (from UNLOCK position to LOCK position) until it stops.



F-2-100

⚠After turning the toner cartridge knob, check to see that the triangle marking of the toner cartridge knob is positioned against LOCK; otherwise, the machine can suffer leakage of toner.



F-2-101

7) Close the toner cartridge access cover.

8) Close the front cover.

2.2.13 Making Initial Settings for the Developing Assembly

⚠If you want to use service mode from this point on, be sure to check to see that the screen indicates [ready] before doing so.

---

1) Execute stirring of the developer.

- Make the following selections, and press [OK]: COPIER>FUNCTION>INSTALL>STIR-4.
- When done, the machine indicates [OK!]. (in about 2 min)

2) Make ATR initial settings.

- Make the following selections, and press [OK]: COPIER>FUNCTION>INSTALL>IN-3.
- When done, the machine indicates [OK!]. (in about 40 sec)

3) Open the front cover.

4) Record the result of the following on the service label: COPIER>FUNCTION>INSTALL>IN-3. Be sure that the following 6 items have been noted:

- for ADJ>DENS>REF-Y of the label, record the value of COPIER>ADJUST>DENS>REF-Y.
- for ADJ>DNES>REF-M of the label, record the value of COPIER>ADJUST>DENS-REF-M.
- for ADF>DENS>REF-C of the label, record the value of COPIER>ADJUST>DENS>REF-C.
- for ADJ>DENS>SGNL-Y of the label, record the value of COPIER>ADJUST>DENS-Y.
- for ADJ>DENS>SGNL-M of the label, record the value of COPIER>ADJUST>DENS>SGNL-M.
- for ADJ>DENS>SGNL-C of the label, record the value of COPIER>ADJUST>DENS>SGNL-C.

5) Close the front cover.

6) Supply toner to the developing assembly.

- Make the following selections, and press [OK]: COPIER>FUNCTION>INSTALL>SPLY-H-4.
- When done, the machine indicates [OK!]. (in bout 1 min)

2.2.14 Initializing the Drum Unit

1) Initialize the drum unit by making the following selections and pressing [OK]:

- COPIER>FUNCTION>CLEAR>DRM-LIFE

The machine flashes [active] on its screen while it executes initialization, which takes about 1 min.

⚠Do not press any of the keys, open the door, or turn off the power switch while initialization is under way (while [active] is flashing); otherwise, go back to step 1) and start over.

---

2) When initialization is done, check to see that the value of the following is '0%':

- COPIER>DISPLAY>MISC>DRM-LIFE

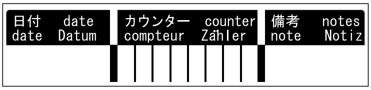
Otherwise, go back to step 2) and start over.

3) Record the value of the following service mode item in the Remarks column of the drum counter label

- COPIER>ADJUST>HV-PRI>DR-I-INT

4) Press the Reset key twice to end service mode.

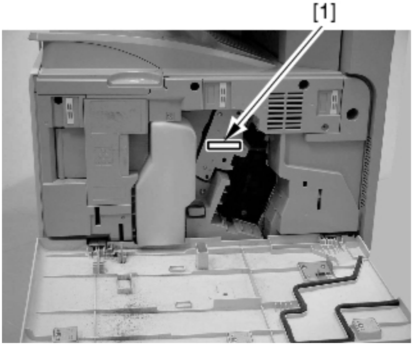
5) Record the date and the counter reading to the drum counter label.



F-2-102

6) Open the front cover.

7) Attach the drum counter label to the front of the drum unit.



F-2-103

8) Close the front cover.

2.2.15 Automatic Gradation Correction

⚠If the machine is not equipped with a copyboard cover, fit the copyboard cover to it. If you are installing a DADF, perform the steps up to A. "DADF" under 2. "Installation" of the DADF-L1 Installation Procedure.

---

1) Clean the machine's copyboard glass.

2) Place A3, A4, 11x17, or LTR paper in the cassette. (See the instructions on how to set up the cassette.)

3) Press the Additional Function key.

4) Make the following selections: adjust/ clean>auto gradation correction>full correction>test print 1.

- The test print 1 will be printed out.

5) Place the printout of the test print 1 on the copyboard glass as instructed on the control panel screen.

6) Close the copyboard cover/ DADF.

7) Press [start to read].

- The machine reads the printout of the test print 1.

- When a message appears prompting you to remove the test print, remove the printout of the test print 1 from the copyboard glass.

8) Press [test print 2].

- The machine prints out the test print 2.

9) Place the printout of the test print 2 on the copyboard glass as instructed on the control panel scan.

10) Close the copyboard cover/ DADF.

11) Press [start to read].

- The machine reads the print out of the test print 2.
- When a message appears promoting you to remove the test print, remove the printout of the test print 2 from the copyboard glass.

12) Press [test print 3].

- The machine prints the test print 3.

13) Place the printout of the test print 3 on the copyboard glass as instructed on the control panel screen.
14) Close the copyboard cover/ DADF.
15) Press [start to read].

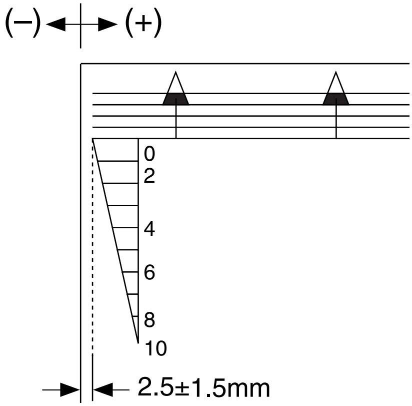
- The machine reads the printout of the test print 3.
- The machine issues a message to indicate that it has completed full correction. In response, remove the printout of the test print 3 form the copyboard glass.

16) Press the Reset key once to end user mode.

2.2.16 Adjusting the Image Position

1. Adjusting the Margin (1st side; mechanical adjustment)

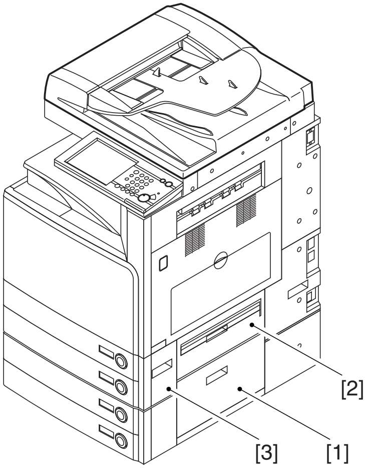
1) Make a copy using the cassettes 1 and 2 as the source of paper; then, check to see that the margin on the front side is 2. +/- 1.5 mm.



F-2-104

- If the value for the cassette 1 or 2 is not as indicated, make the following adjustments:

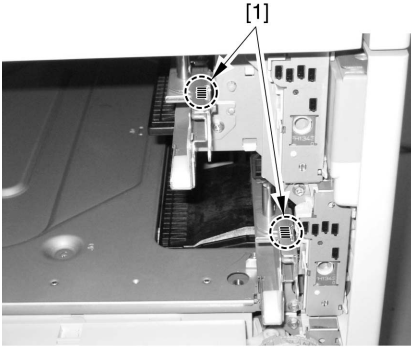
2) If a 2-Cassette Pedestal-Y1 is used, open its right door [1].
3) Open the lower right cover [2]; then, remove the 2 screws [3], and detach the cover (lower front) [3].



F-2-105

4) Slide out the cassettes 1 and 2.

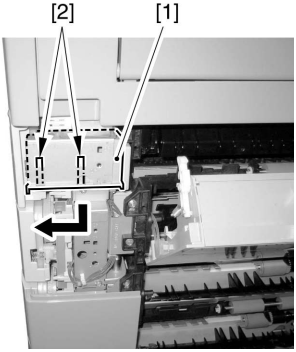
5) Check the index position [1] on the adjusting plate.



F-2-106

- Making Adjustments for the Cassette 1

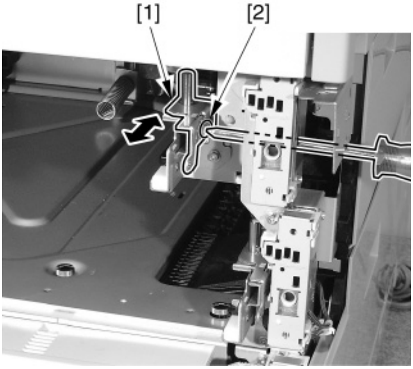
6) Free the 2 claws [2], and pull the grip (right front) [1] in the direction of the arrow to detach.



F-2-107

7) Loosen the fixing screw [2] of the adjusting plate [1].

8) By referring to the index you took note of in step 5), move the adjusting plate back and forth. Moving it toward the rear of the machine will increase the margin on the image front.



F-2-108

9) Tighten the fixing screw.

10) Slide in the cassette 1.

11) Make a copy using the cassette 1 as the

source of paper; then, check to see that the margin in the image front direction is 2.5 +/-1.5 mm.

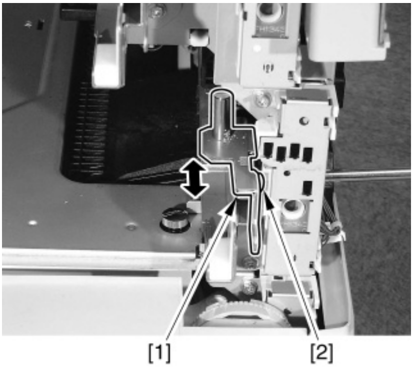
12) Mount back the grip (front right).

13) Mount back the machine's front right cover.

- Making Adjustments to the Cassette 2

6) Loosen the fixing screw [2] of the adjusting plate [1].

7) By referring to the index you took note of in step 5), move the adjusting plate back and forth. Moving it toward the rear of the machine will increase the margin on the image front side.



F-2-109

8) Tighten the fixing screw.

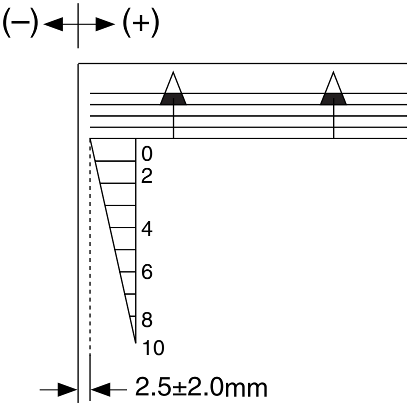
9) Slide back the cassette 2.

10) Make a copy using the cassette 2 as the source of paper; then, check to see that the margin in the image front direction is 2.5 +/-1.5 mm.

11) Mount back the machine's right front cover.

2. Adjusting the Margin (2nd side)

1) Make a copy using the cassette 1 as the source of paper; then, check to make sure that the margin on the front side is 2.5 +/-2.0 mm.



F-2-110

2) If the margin is as indicated, change the adjustment value of the horizontal registration for the 2nd side for the cassette 1.

- COPIER>ADJUST>FEED-ADJ>ADJ-C1RE

An increase by '1' will decrease the margin on the front side by 0.1 mm.

3) Enter the adjustment value for the horizontal registration of the 2nd side for the cassette 1 as the adjustment value for the horizontal registration of the 2nd side of the cassette 2.

- COPIER>ADJUST>FEED-ADJ>ADJ-C2RE

4) Make a copy using the cassette 2 as the

source of paper; then, check to make sure that the margin on the front side is 2.5 +/-2 mm.

5) If the value is not as indicated, change the adjustment value of the 2nd side for the cassette 2.

- COPIER>ADJUST>FEED-ADJ>ADJ-C2RE

An increase by '1' (for DJ-C2RE) will decrease the horizontal registration on the front side by 0.1 mm.

6) Record the new values on the service label.

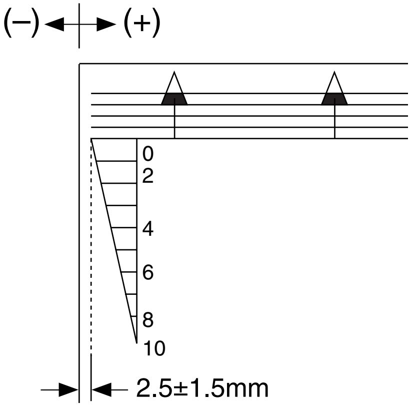
- ADJ-C1RE
- ADJ-C2RE

7) Press the Reset key twice to end service mode.

3. Adjusting the Margin for the Manual Feed Tray (1st side; mechanical adjustment)

1) Place paper in the manual feed tray. For instructions, see the label attached to the manual feed tray.

2) Make a copy using the manual feed tray as the source of paper; then, check to make sure that the margin on the front side is 2.5 +/-1.5 mm.



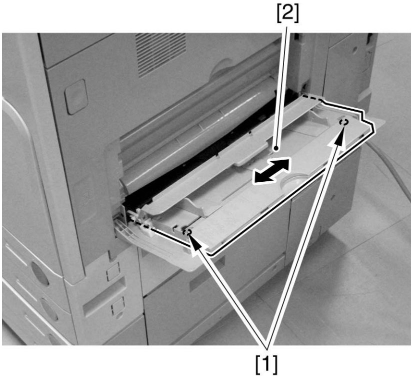
F-2-111

- If the value is not as indicated, make the following adjustments:

3) Remove the paper from the manual feed tray.

4) Loosen the fixing screw [1] of the manual feed tray upper cover.

5) With reference to the value you took note of in step 2), move the manual feed upper cover back and forth. Moving it toward the rear of the machine will increase the margin on the front side.



F-2-112

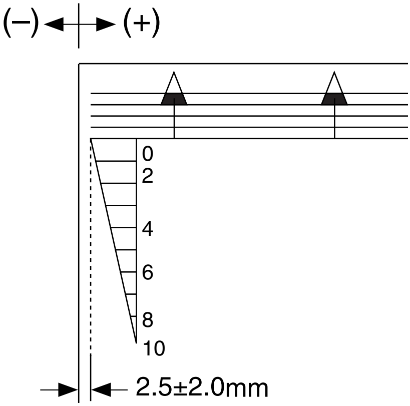
6) Tighten the fixing screw of the manual feed tray upper cover.

7) Place paper in the manual feed tray.

8) Make a copy; then, check to make sure that the margin on the image front side is 2.0 +/-1.5 mm.

4. Adjusting the Margin (manual feed tray; 2nd side)

1) Make a double-sided copy using the manual feed tray as the source of paper; then, check to make sure that the margin on the front side for the 2nd side is 2.5 +/-2.0 mm.



F-2-113

2) If the value is not as indicated, change the horizontal registration adjustment value for the 2nd side for the manual feed tray.

- COPIER>ADJUST>FEED-ADJ>ADJ-MFRE

An increase by '1'(ADJ-MFRE) will decrease the margin on the front side by 0.1 mm.

3) Record the new adjustment value on the service label.

- ADJ-MFRE

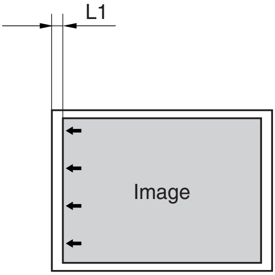
4) Press the Reset key twice to end service mode.

5. Adjusting the Margin Along the Leading Edge (1st side)

- Make a copy using the cassette 1 as the source of paper; then, check to make sure that the margin along the image leading edge (L1) is 2.5 +/-1.5 mm. If not, make adjustments as follows:

1) Make the following selections in service mode: COPIER>ADJUST>FEED-ADJ>REGIST.

2) Change the setting to make adjustments. (A change of '1' will cause a shift of 0.1 mm, with a higher value moving the image toward the leading edge.)



An increase in REGIST will shift the image toward the leading edge of the paper.

F-2-114

3) Record the new adjustment value on the service label.

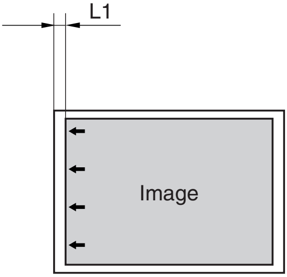
- REGIST

6. Adjusting the Margin Along the Leading Edge (2nd side)

- Make a double-sided copy using the cassette 1 as the source of paper; then, check to see if the margin along the image leading edge for the 2nd side (L) is 2.5 +/-2.0 mm. If not, make adjustments as follows:

1) Make the following selections in service mode: COPIER>ADJUST>FEED-ADJ>RG-REFE.

2) Change the setting, and make adjustments. (A change of '1' will cause a shift of 0.1 mm, with a higher setting moving the image toward the leading edge.)



An increase in RG-REFE will shift the image toward the leading edge of paper (toward the trailing edge of feed).

F-2-115

3) Record the new adjustment value on the service label.

- RG-REFE

7. Correcting the Shading Position

If the output image made in copyboard cover mode has a line, go through the following:

1) Make the following selections in service mode: COPIER>ADJUST>ADJ-XY>ADJ-S.

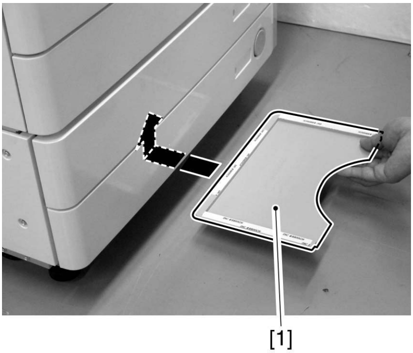
2) Change the setting to change the shading position:

- Try +5, +10, -5, or -10 to look for the best position (where the standard white plate is free of scratches and dirt).

2.2.17 Others

1.Service Book Case

1) Peel off the double-sided adhesive tape from the ribbed side of the service book case [1], and attach the case to the pedestal bottom plate.



F-2-116

⚠Areas to Avoid:

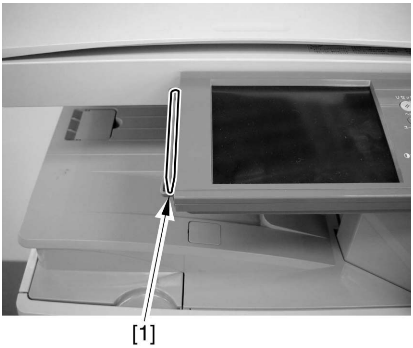
- inside the machine (i.e., behind the front cover)
- over the louver
- over the grip

Memo:

If no pedestal is used, attach the case to the left cover.

2. Touch Pen

1) Fit the touch pen [1] to the control panel.

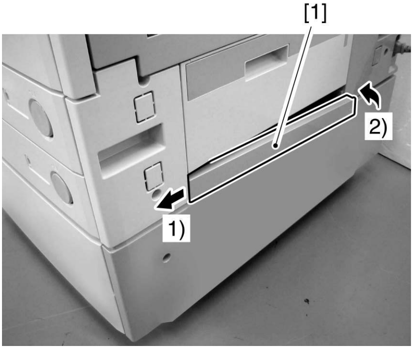


F-2-117

3. Lower Right Cover

1) Mount the lower right cover [1].

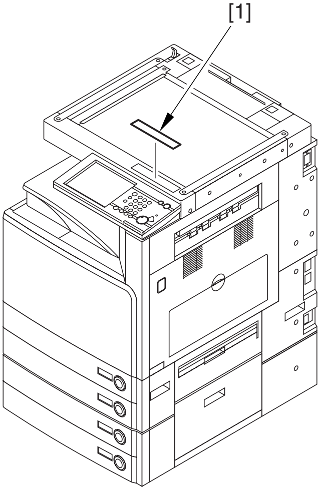
(Perform this step if you are installing the machine on a pedestal other than a Cassette Feeding Unit-Y1.)



F-2-118

4. Do Not Copy Label

1) Select the Do Not Copy label [1] of the appropriate language, and attach it to the reader cover (front) as indicated in the figure.



F-2-119

2.2.18 If Not Connected to a Network

MEMO

Memo

If the machine is not connected to a network, its control panel will display the message “Check Connection to the Network.” To disable the message, set the following service mode item to ‘0’:

COPIER> OPTION> BODY> NWERR-SW (level 2)

2.3 Checking the Connection to the Network

2.3.1 Connecting to the Network

⚠Go through the following steps only if you are connecting the machine to a network:

---

1) Turn off the control panel power switch.
2) Turn off the main power switch.
3) Connect the network cable to the machine, and turn on the main power switch.
4) Inform the user's system administrator that the installation work is over, and ask him/her to set up the machine for use on the user's network.
5) When network settings have been made, turn off the control power switch, and then turn off and then on the main power switch.

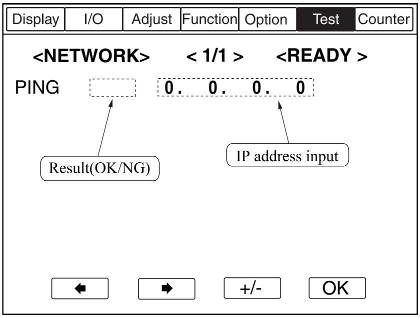
2.3.2 Using PING

⚠Go through the following steps only if the machine is connected to a network:
If the user's network environment is based on TCP/IP, use the PING function to see that the Ethernet PCB has been correctly mounted and the network settings have been correctly made. If the user's network environment is based on IPX/SPX or AppleTalk, on the other hand, you need not make a PING-based check.

---

1) Make the following selections in service mode: COPIER>TEST>NETWORK>PING.
2) Enter the IP address using the keypad on the control panel, and press the OK key.
3) Press the Start key.

- If the PING check is successful, the machine will indicate 'OK'; otherwise, it will indicate 'NG'.


Display
I/O
Adjust
Function
Option
Test
Counter
<NETWORK>
< 1/1 >
<READY >
PING
0. 0. 0. 0
Result(OK/NG)
IP address input
+/-
OK

F-2-120

2.3.3 Making Checks Using a Remote Host Address

You can execute PING using a remote host address, thereby checking the connection to the network.

The term "remote address" refers to the IP address of a PC terminal connected to and operating in a TCP/IP network environment to which the machine belongs.

---

1) Inform the system administrator that you will be checking the connection to the network using PING.
2) Check with the system administrator to find out the remote host address.
3) Enter the remote host address you obtained in PING.
4) If the indication is 'OK", the machine is correctly connected to the network.
5) If the indication is 'NG", the machine is not correctly connected to the network. Go through the following troubleshooting steps:

2.4 Troubleshooting the Network

2.4.1 Troubleshooting the Network

⚠Go through the following steps only if the machine is connected to the network:

If the connection to the network is not correct, you may suspect the following:

a. poor connection between the network and the Ethernet PCB
b. wrong TCP/IP setting on the machine
c. faulty Ethernet PCB or poorly mounted PCB
d. faulty user network

Go through the following steps to find out and correct the cause:

2.4.2 Making Checks Using a Loopback Address

A loopback address returns before it reaches the network PCB; therefore, executing PING using a loopback address will enable you to find out whether the TCP/IP settings of the machine are correct.

1) Enter the loopback address (127.0.0.1) to PING.

- if the machine indicates 'NG', check the TCP/IP settings of the machine once again, and then execute PING once again.
- if the machine indicates 'OK', check the local host address.

2.4.3 Checking the Connection of the Network Cable

The local host address is the IP address of the machine; therefore, executing PING using the local host address, which returns after it has reached the network PCB, enables you to find out if the network PCB is good or not.

1) Enter the IP address of the machine to PING.

- if the machine indicates 'NG', make the following checks/corrections, and execute PING once again.

a. faulty IP address of the machine: check with the system administrator to find out if the IP address (and its settings) assigned to the machine is correct.

b. poor connection of the network PC: check the connectors associated with the network PCB.

c. faulty network PCB: replace the network PCB.

- if the machine indicates 'OK', suspect a fault in the user's network environment. Report to the system administrator, ask for corrective action.

2.5 Checking the Images/Operations

2.5.1 Checking the Images

1) Place the test chart on the copyboard glass, and make copies using the individual cassettes as the source of paper. then, check the images.

- check to see that the machine does not produce any abnormal noise.
- check to see that the images are produced correctly at different magnifications.
- check to see that the machine produces as many copies as specified normally.

2) Make settings (Additional Function ; e.g., date, time) to suit the needs of the user.

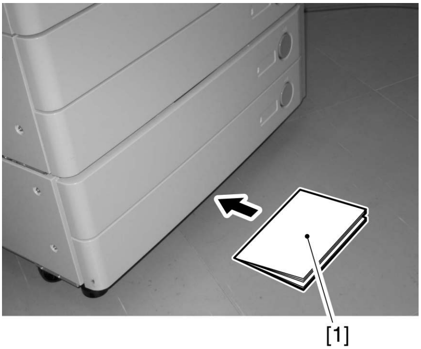
3) Start service mode.

- press the Additional Function key, press the 2 and 8 keys at the same time, press the Additional Function key once gain.

4) Make the user-related settings to suit the needs of the user (COPIER>OPTION>USER).

5) Print out test prints in service mode (COPIER>FUNCTION>MISC-P>P-PRINT).

6) Put away the printed test print [1] in the service book case.



F-2-121

7) Press the Reset key twice to end service mode.

8) Clean up the area around the machine, and fill out the service book.

2.6 Relocating the Machine

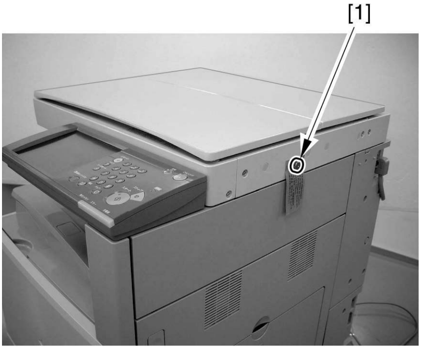
2.6.1 Relocating the Machine

If you need to relocate the machine after installation by truck or other means of transportation, be sure to perform the following work in advance:

⚠If you want to move the machine intact with its pedestal, be sure not to use the machine's grips; otherwise, the machine will come off the pedestal as when it is moved over a step. Be sure to lift the pedestal.

---

1) Fix the scanner in place using the scanner fixing screw [1] that has been set aside from the time of installation.



F-2-122

2) Put paper on the copyboard glass.

3) Remove all toner cartridges and developing assembly so that the developing rotary will not rotate in response to vibration occurring in transit.

2.7 Installing the Card Reader-C1

2.7.1 Points to Note

⚠You will need a Card Reader Mounting Kit-B1 to install the Card Reader-C1.

2.7.2 Checking the Contents

<Card Reader-C1>

[1] Card Reader-C1	1 pc
[2] Screw (RS tightening; M4x10)	1 pc.
[3] Toothed washer	1 pc.

<Card Reader Mounting Kit-B>

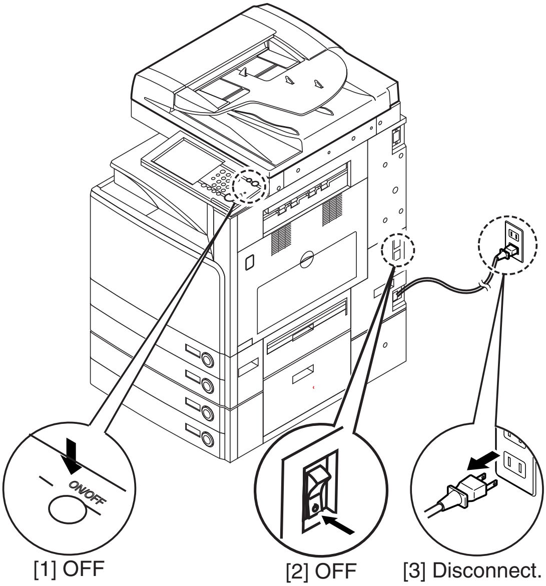
[1] Card reader base	1 pc.
[2] Relay harness	1 pc.
[3] TP screw (M4x8)	1 pc.
[4] TP screw (M4x25)	1 pc.
[5] Toothed washer	1 pc.

2.7.3 Installation

⚠When you have installed the Card Reader-C1, enter the numbers of the cards to be used in service mode (COPIER>FUNCTION>INSTALL>CARD); otherwise, the reader will not recognize cards upon insertion.

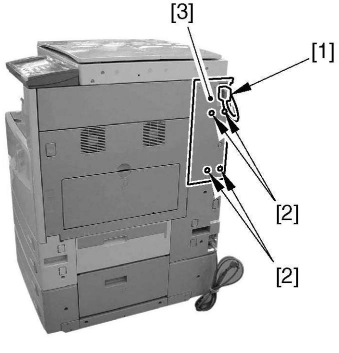
---

1) Turn off the control panel power switch.
2) Turn off the main power switch.
3) Disconnect the power cable (from the power outlet) [3].


ON/OFF
[1] OFF
[2] OFF
[3] Disconnect.

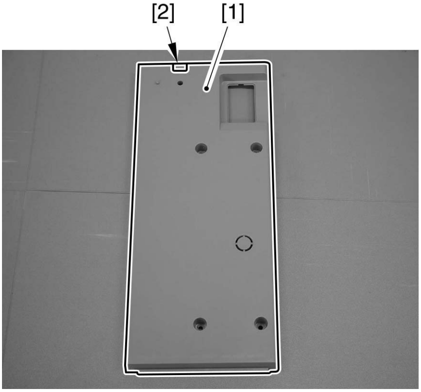
F-2-123

4) Disconnect the reader power cable [1].
5) Remove the 4 screws [2], and detach the rear right cover [3].



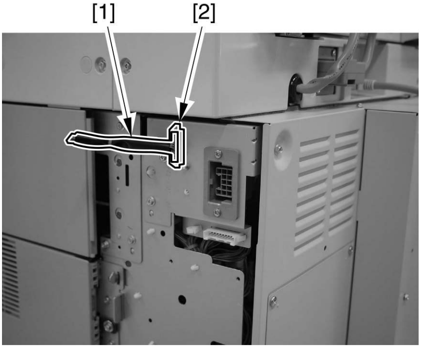
F-2-124

6) Remove the face plate [2] of the rear right cover using nippers or the like.



F-2-125

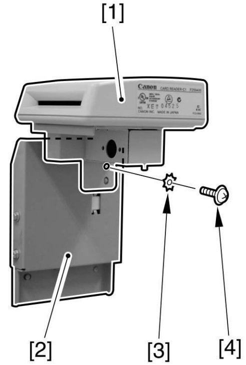
7) Connect the relay cable [1] to the machines' connector assembly.



F-2-126

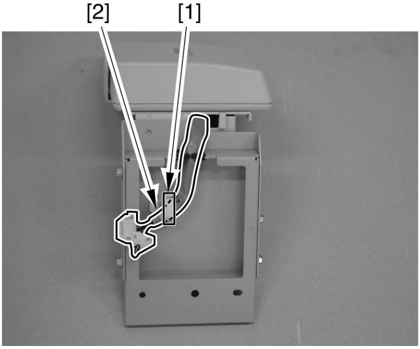
8) Mount the rear right cover using 4 screws.

9) Mount the card Reader-C1 [1] and the card reader base [2] using the included TP screw (M4x8) [4] together with its washer [3].



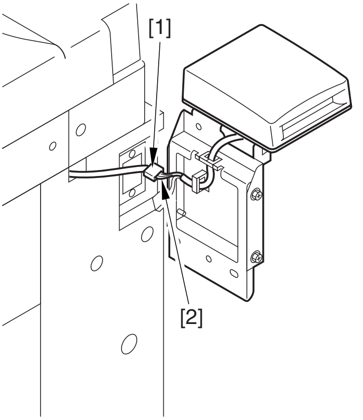
F-2-127

10) Route the relay cable [2] through the wire saddle.



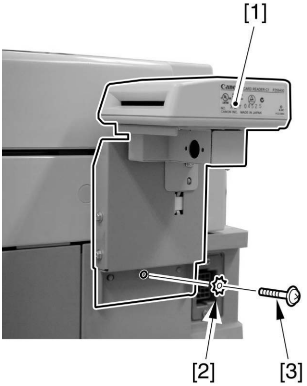
F-2-128

11) Connect the machine's cable [1] to the relay cable [2] of the Card Reader-C1.



F-2-129

12) Taking care so that that the harness will not be trapped, mount the card Reader-C1 [1] using a TP screw (M4x25) [3] together with its washer [2].



F-2-130

13) Connect the power cable to the power outlet, and turn on the power. Check to see that the machine has entered a standby state, and start service mode.

14) Enter the numbers of the cards to be used in service mode (COPIER>FUNCTION>INSTALL>CARD).

- Enter the lowest number of the card numbers the user is planning to use.
- As many as 300 cards may be used (starting with the number you have entered).

15) Turn off the control panel power switch.

16) Turn off and then on the main power switch.

2.7.4 Using with NetSpot Accountant (NSA)

1) Make the following selections in Additional Function: system control settings>group ID control>count control; then, check to see IDs 00000001 thorough 00001000 have been created (i.e., if you entered '1' as the first number in service mode): COPIER>FUNCTION>INSTALL>CARD).

2) Make the following selections in Additional Function: system control settings>network settings>TCP/IP settings>IP address; then set up the following: IP address, gateway address, subnet mask.

⚠Take care. If you fail to register [system control group] and [system control ID No.], you will not be able to perform 'register card to device' as part of NSA setup work.

---

3) Under [system administrator info] of Additional Function, enter any number for [system control group] and [system control ID No.].

4) Turn off the control panel switch.

5) Turn off and then on the main power switch.

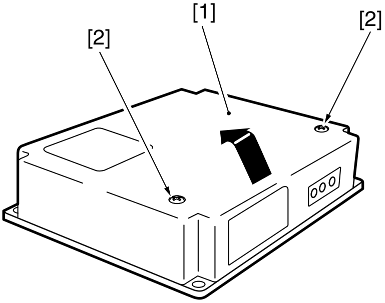
2.8 Installing the NE Controller-A1

2.8.1 Installing the NE Controller-A1

If you want to install an NE controller-A1 to the machine, be sure to observe the following:

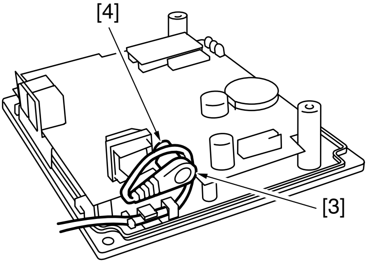
1. follow the laws and regulations of the country in question.
2. check to see that the host machine has properly been installed.
3. check to see that the host machine's power plug is disconnected.
4. identify the screws by type (length, diameter) and location.
5. prepare the unit setup data on the PC at the service station.

1) Remove the 2 screws [2], and detach the upper cover [1] of the unit.



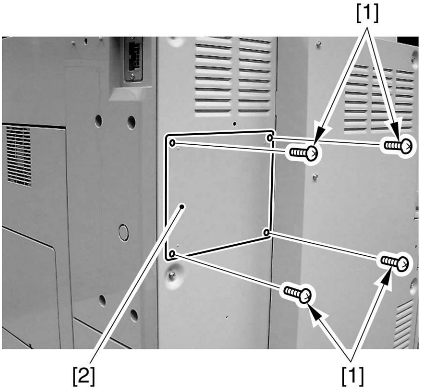
F-2-131

2) Connect the connector [3] of the power supply to the connector [4] of the unit.



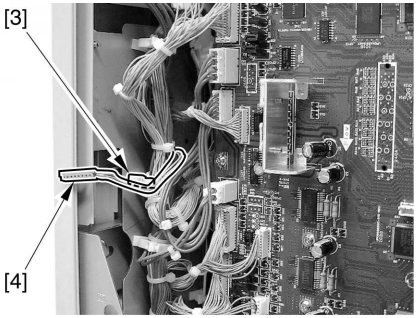
F-2-132

3) Remove the 4 screws [1], and detach the face plate [2] of the host machine's upper cover.



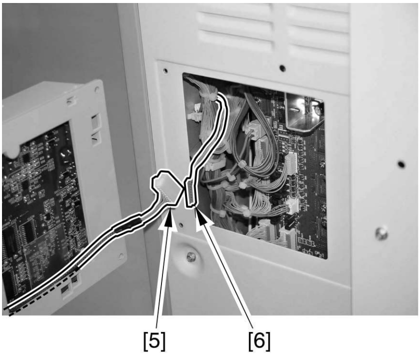
F-2-133

4) Remove the wire saddle [3], and detach the cable [4] of the unit.



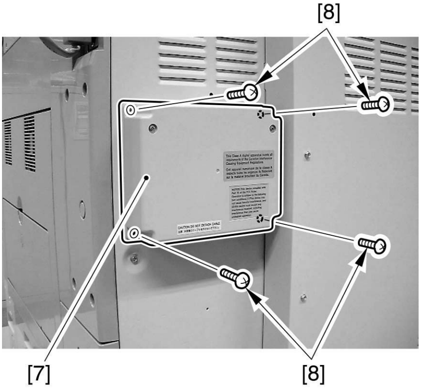
F-2-134

5) Connect the cable [5] of the unit to the connector [6] of the host machine's DC controller.



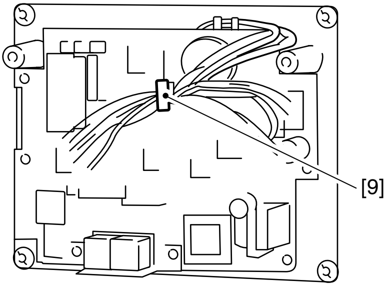
F-2-135

6) Fix the unit [7] in place to the host machine's rear cover using 4 screws [8]. (Use the screws that come with the unit.)



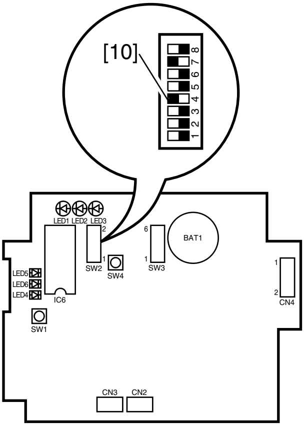
F-2-136

7) Remove the slack from the cable lying between the host machine and the unit; bundle the excess length of cable, and fix it in place using the harness band [9].



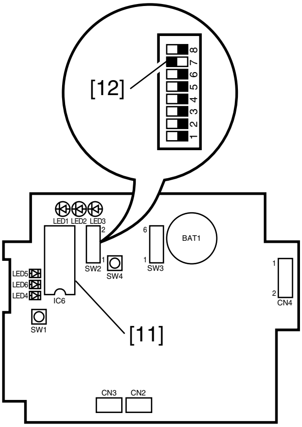
F-2-137

8) Shift bit 4 of the DIP switch [10] on the PCB to ON (SW2-4 so that the communication between the unit and the host machine will be in IPC mode).


[10]
1 2 3 4 5 6 7 8
LED1 LED2 LED3
SW2
SW4
SW3
BAT1
LED5
LED6
LED4
IC6
SW1
CN4
CN3 CN2

F-2-138

9) If IC6 [11] is found on the PCB, shift bit 7 of the DIP switch [12] (SW2-7) to ON; otherwise, shift it to OFF.


[12]
1 2 3 4 5 6 7 8
LED1 LED2 LED3
SW2
SW4
SW3
BAT1
LED5
LED6
LED4
IC6
SW1
CN4
[11]
CN3 CN2

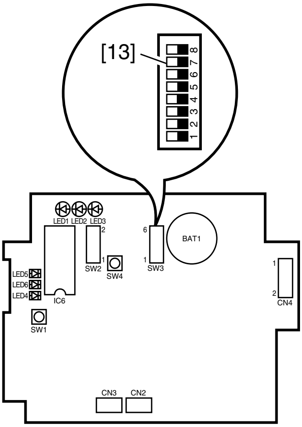
F-2-139

⚠If IC6 [11] is not found, there is no need to mount one.

If you are mounting a ROM (IC6) [11] for upgrading the unit or replacing the ROM, be sure to shift bit 7 of the DIP switch [12] to ON (SW2-7).

---

10) Set the bits of the DIP switch [13] (SW3) on the PCB as indicated:


[13]
1 2 3 4 5 6 7 8
LED1 LED2 LED3
2
1
SW2
SW4
6
1
SW3
BAT1
LED5
LED6
LED4
IC6
SW1
1
2
CN4
CN3
CN2

F-2-140

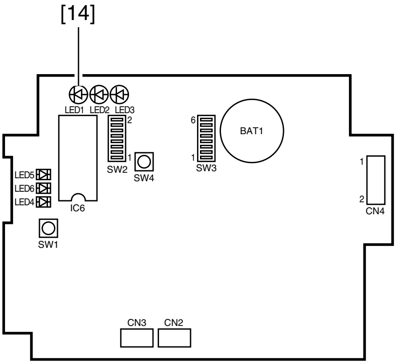
T-2-5

Notation	Setting	SW3-1	SW3-2	Description
		OFF	OFF	set the modem signal transmission level to -16 dBm.
		ON	OFF	set the modem signal transmission level to -14 dBm.
SW3-1	see right	OFF	ON	set the modem signal transmission level to -12 dBm.
SW3-2		ON	ON	set the modem signal transmission level to -10 dBm.

SW3-3	OFF	set to OFF at all times.
SW3-4	ON	set the line of the unit to push pulse.
	OFF	set the line of the unit to dial pulse.

Notation	Setting	SW3-1	SW3-2	Description
SW3-5	ON	set the dial pulse speed to 20 PPS.		
	OFF	set the dial pulse speed to 10 PPS.		
SW3-6	-	not used		

11) Connect the power supply to the power plug; then, check to see that LED1 [14] on the PCB (green) comes on.


[14]
LED1
LED2
LED3
2
1
SW2
SW4
6
1
SW3
BAT1
1
2
CN4
LED5
LED6
LED4
IC6
SW1
CN3
CN2

F-2-141

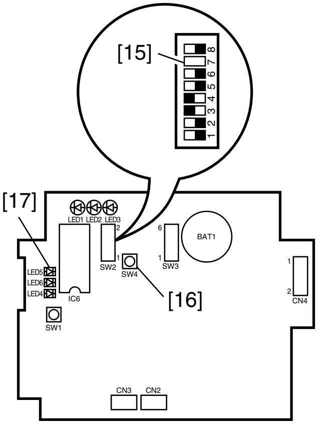
12) Initialize the RAM of the unit.

See the bits of the DIP switch [15] (SW2) of the PCB as indicated; then, press the push switch [16] (SW4) so that LED5 [17] (red) goes on.

T-2-6

bits of SW2	Setting
SW2-1	OFF
SW2-2	OFF
SW2-3	ON
SW2-4	ON
SW2-5	OFF

bits of SW2	Setting
SW2-6	OFF
SW2-7	See step 9).
SW2-8	OFF


[15]
1 2 3 4 5 6 7 8
[17]
LED1 LED2 LED3
LED5
LED6
LED4
IC6
SW1
SW2
SW4
[16]
SW3
BAT1
CN4
CN3
CN2

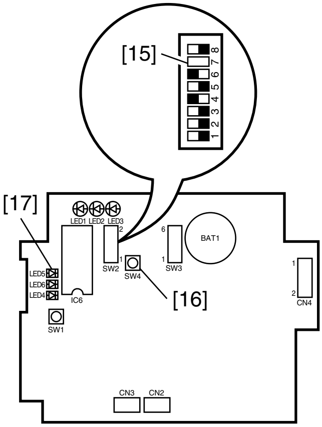
F-2-142

13) When LED5 [17] (red) has come on, set the bits of the DIP switch [15] (SW2) on the PCB as indicated, and press the push switch [16] (SW4) so that LED5 [17] (red) goes off to indicate that RAM has been initialized.

T-2-7

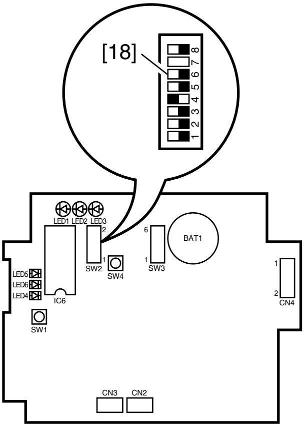
bits of SW2	Setting
SW2-1	OFF
SW2-2	OFF
SW2-3	OFF
SW2-4	ON
SW2-5	OFF

bits of SW2	Setting
SW2-6	ON
SW2-7	See step 9).
SW-8	OFF


[15]
8
7
6
5
4
3
2
1
[17]
LED1
LED2
LED3
2
1
SW2
SW4
6
1
SW3
BAT1
LED5
LED6
LED4
IC6
[16]
1
2
CN4
SW1
CN3
CN2

F-2-143

14) Shift bit 6 of the DIP switch [18] (SW2-6) on the PCB to OFF.

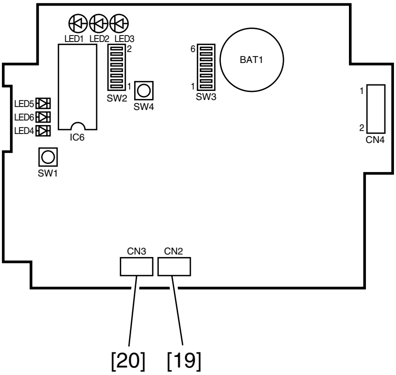

[18]
8
7
6
5
4
3
2
1
LED1
LED2
LED3
2
1
SW2
SW4
6
1
SW3
BAT1
LED5
LED6
LED4
IC6
1
2
CN4
SW1
CN3
CN2

F-2-144

15) Connect the telephone line to the unit.

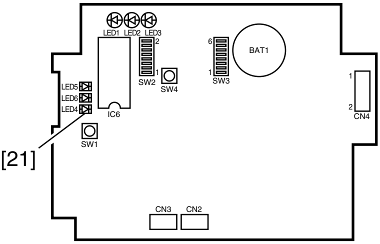
If the unit is to be used on its own, connect the modular jack cable to the connector [19] (LINE) of the unit.

If the extension function of the unit is to be used, connect the existing telephone or fax to the connector [20] (TEL) of the unit, and connect the telephone line to the other connector [19] (LINE) of the unit.


LED1
LED2
LED3
SW2
SW4
SW3
BAT1
LED5
LED6
LED4
IC6
SW1
CN4
CN3
CN2
[20]
[19]

F-2-145

16) Call the service station, and ask for initial setup work for the unit. (In response to an incoming call, LED4 (red) [21] of the unit will come on.)


LED1
LED2
LED3
SW2
SW4
SW3
BAT1
LED5
LED6
LED4
IC6
SW1
CN4
CN3
CN2
[21]

F-2-146

17) Call the service station, and check to find out if the initial setup work for the unit has ended. If the work failed, go back to RAM initialization, and go through steps 11) through 13).

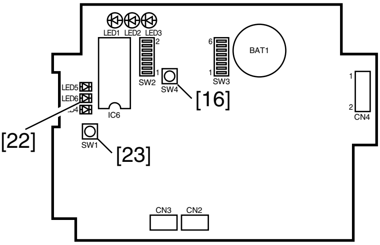
⚠Be sure to find out if the settings of the unit are correct by contacting the service station.

18) Check to find out if a call may be placed using the unit to the PC located at the service station.

Press the push switch [16] (SW4) of the PCB. In response, LED6 [22] (red) will go on; it goes off when the transmission is done, and starts to flash if it fails.

A press on the push switch (SW4) [16] while LED6 [22] is flashing will initiate transmission for a second time.

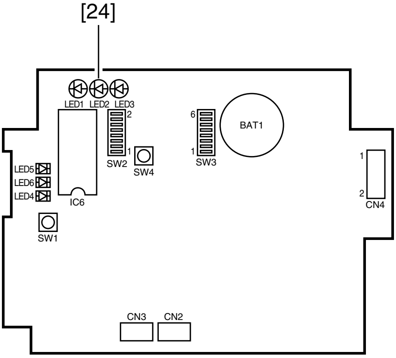
A press on the push switch (SW1) [23] while LED6 [22] is flashing will cancel the ongoing transmission by the unit.



F-2-147

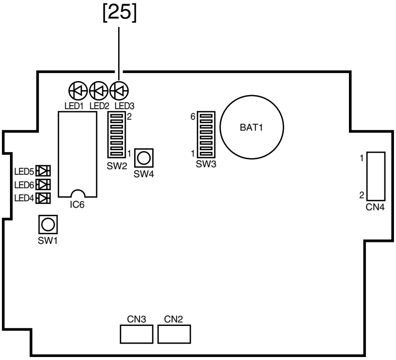
19) Check to see that the communication between the unit and its host machine is normal.

Connect the host machine's power plug, and turn on the power switch; then, see that LED2 [2] (orange) flashes.


[24]
LED1
LED2
LED3
2
1
SW2
SW4
6
1
SW3
BAT1
1
2
CN4
LED5
LED6
LED4
IC6
SW1
CN3
CN2

F-2-148

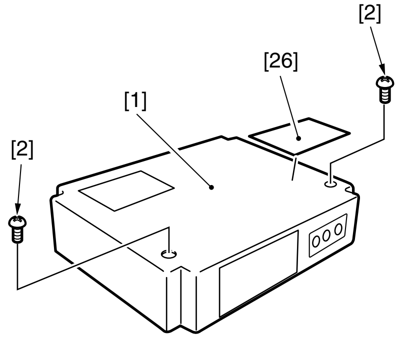
20) Press the host machine's Start key, and check to see that LED3 [25] (pink) flashes each time delivery takes place.


[25]
LED1
LED2
LED3
2
1
SW2
SW4
6
1
SW3
BAT1
1
2
CN4
LED5
LED6
LED4
IC6
SW1
CN3
CN2

F-2-149

21) Attach the Switch Settings label [26] to the upper cover; then, record the individual switch settings.

22) Mount the upper cover [1] in place with 2 screws [2]. When doing so, be sure that heat cable of the power supply is secured by the cable guide inside and is not trapped by the upper cover [1].



F-2-150

2.9 Installing the Key Switch Unit-A1

2.9.1 Checking the Contents

Key Switch Unit-A1

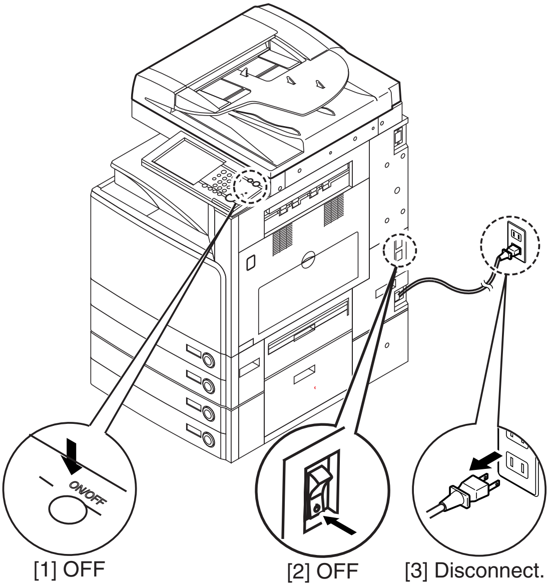
[1] Key Switch Unit	1 PC.
[2] Control key	1 pc.
[3] Binding screw (M4x6)	1 pc.

2.9.2 Installation

⚠Before stating the work, be sure to go through the following on the host machine in strict order:

---

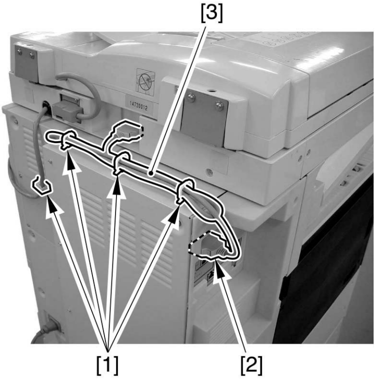
1. turn off the control panel power switch.
2. turn off the main power switch.
3. disconnect the power cable (from the power outlet).


ON/OFF
[1] OFF
[2] OFF
[3] Disconnect.

F-2-151

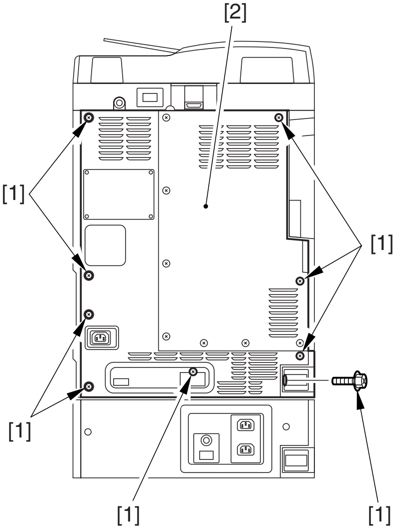
1) Remove the 3 wire saddles [1].

2) Disconnect the connector [2], and detach the reader communication cable [3].



F-2-152

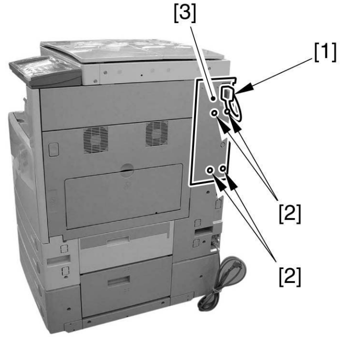
3) Remove the 9 screws [1], and detach the rear cover [2].



F-2-153

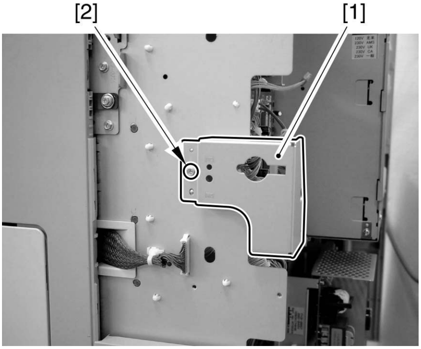
4) Disconnect the reader power cable [1].

5) Remove the 4 screws [2], and detach the rear right cover [3].



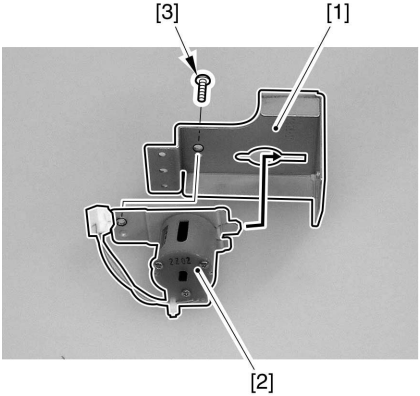
F-2-154

6) Remove the screw [2], and detach the bracket [1] from the key switch.



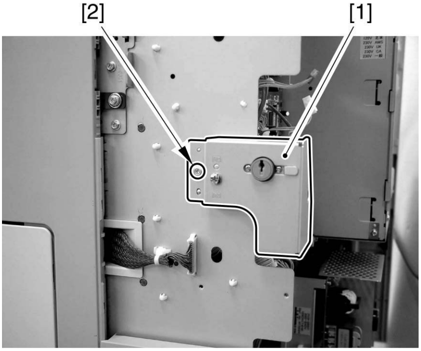
F-2-155

7) Mount the key switch unit [2] to the key switch breaker [1] using the included screw [3] (M4x6).



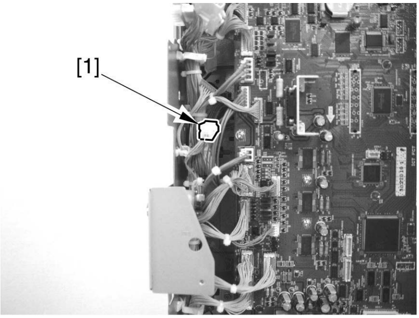
F-2-156

8) Mount the key switch bracket [1] with a screw [2].



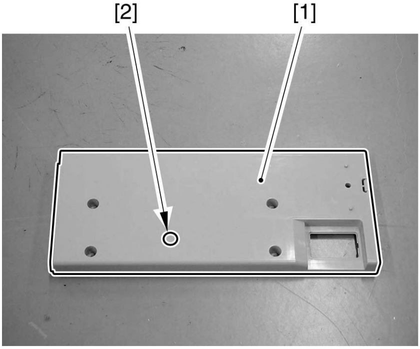
F-2-157

9) Connect the connector [1] of the key switch unit.



F-2-158

10) Remove the face plate [2] from the rear right cover [1] using nippers.



F-2-159

11) Mount the rear cover of the host machine using 9 screws.
12) Mount the rear right cover using 4 screws.
13) Fit the reader communications cable.
14) Fit the reader power cable.
15) Fit the power cable (for the power outlet).
16) Turn on the main power switch.

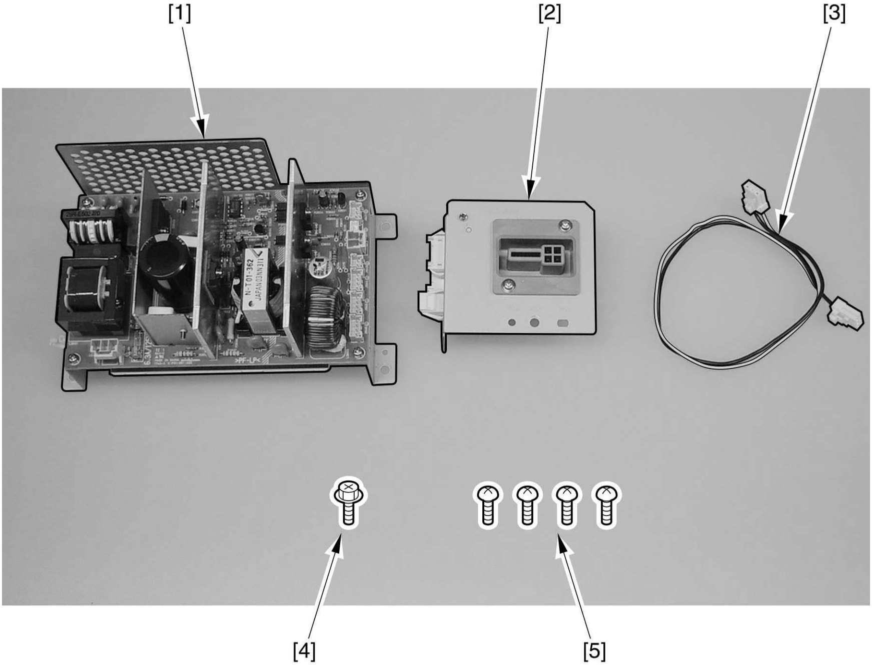
2.9.3 Making Checks After Installation

1) Start service mode.
2) Make the following selections, and enter '1': COPIER>FUNCTION>INSTALL>KEY.
3) Turn off the control panel power switch.
4) Turn off and then on the main power.
5) Check to see that the message "set the control key" has appeared.
6) Fit the key to the key switch unit.

2.10 Installing the Accessories Power Supply Unit

2.10.1 Checking the Contents

Open the shipping box, and check to make sure none of the following is missing:



F-2-160

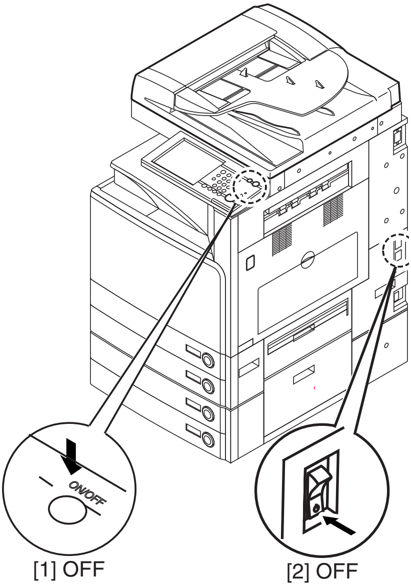
T-2-8

[1]	Accessories Power Supply	1 unit
[2]	Finisher connector base	1 pc.
[3]	Relay harness	1 pc.
[4]	RS tightening screw (M3x8)	1 pc.
[5]	TP screw (M3x6)	4 pc.

2.10.2 Turning Off the Host Machine

⚠Before starting the work, be sure to go through the following on the host machine:

1. Turn off the control panel power switch.
2. Turn off the main power switch.
3. Disconnect the power cable (from the power outlet).

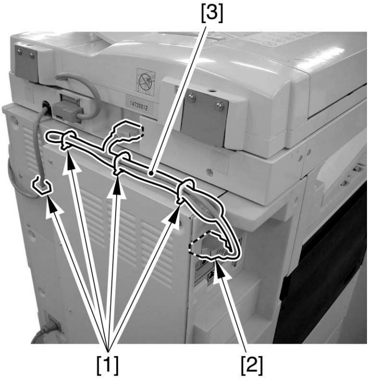


F-2-161

2.10.3 Installing the Accessories Power Supply PCB

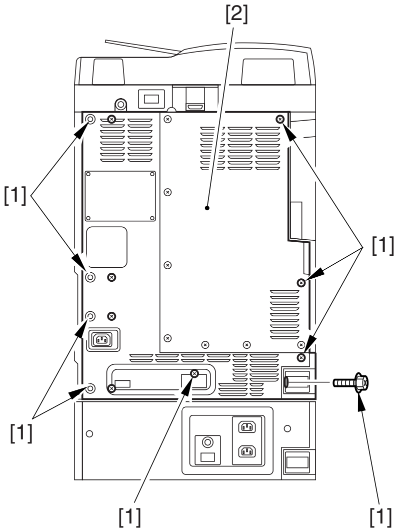
1)Remove the 4 wire saddles [1].

2)Disconnect the connector [2] and then the reader communications cable [3].



F-2-162

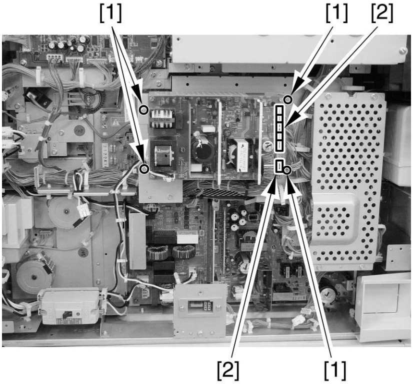
3)Remove the 9 screws [1], and detach the rear cover [2].



F-2-163

4)Using the 4 included TP screws (M3x6) [4], mount the accessories power supply PCB to the host machine.

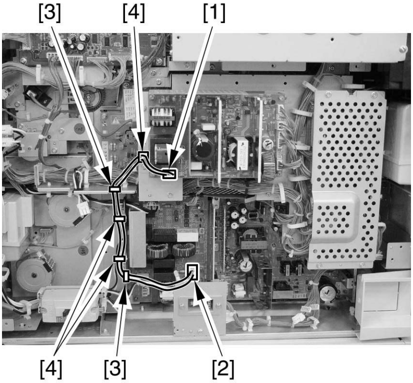
5)Connect the 6 connectors [2] from the host machine's harness to the accessories power supply PCB.



F-2-164

6)Using the relay harness, connect the connector J640 [1] of the accessories power supply and the connector J203 [2] of the AC driver PCB.

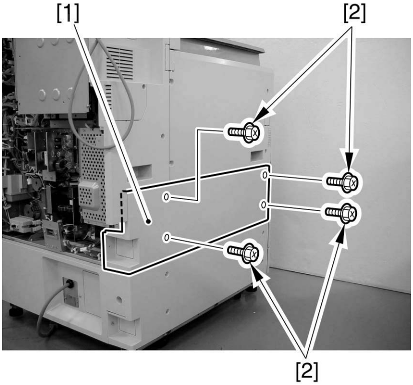
Be sure to route the harness through the 2 clamps [3] and the 3 wire saddles [4].



F-2-165

2.10.4 Mounting the Finisher Connector Base

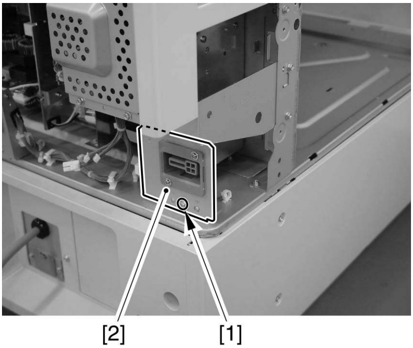
1)Slide out both upper and lower cassettes; then, remove the 4 screws [2], and detach the host machine's left lower cover [1].



F-2-166

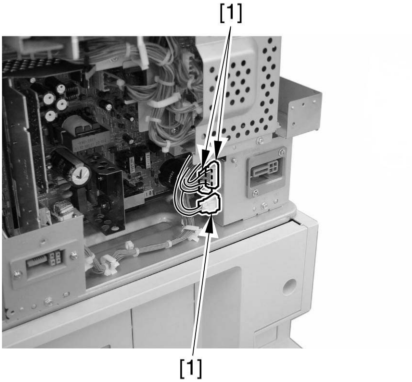
2)Fit the finisher connector base [1] using the included RS tightening screw [2].

⚠Keep in mind that the screw hole on the host machine side is not tapped.



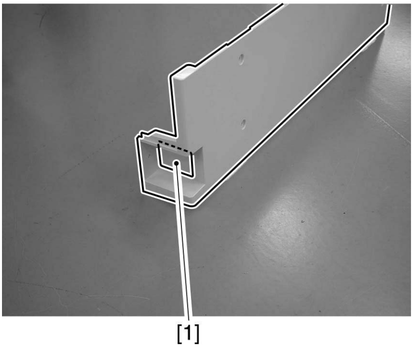
F-2-167

3)Fit the 3 connectors [1] inside the host machine to the finisher connector base.



F-2-168

4)Remove the dressing piece [1] for the finisher connector base of the host machine's left lower cover using nippers.



F-2-169

5)Fit the host machine's left lower cover using 4 screws.

6)Put back both upper and lower cassettes.

7)Mount the host machine's rear cover using 9 screws.

8)Fit the reader communications cable.

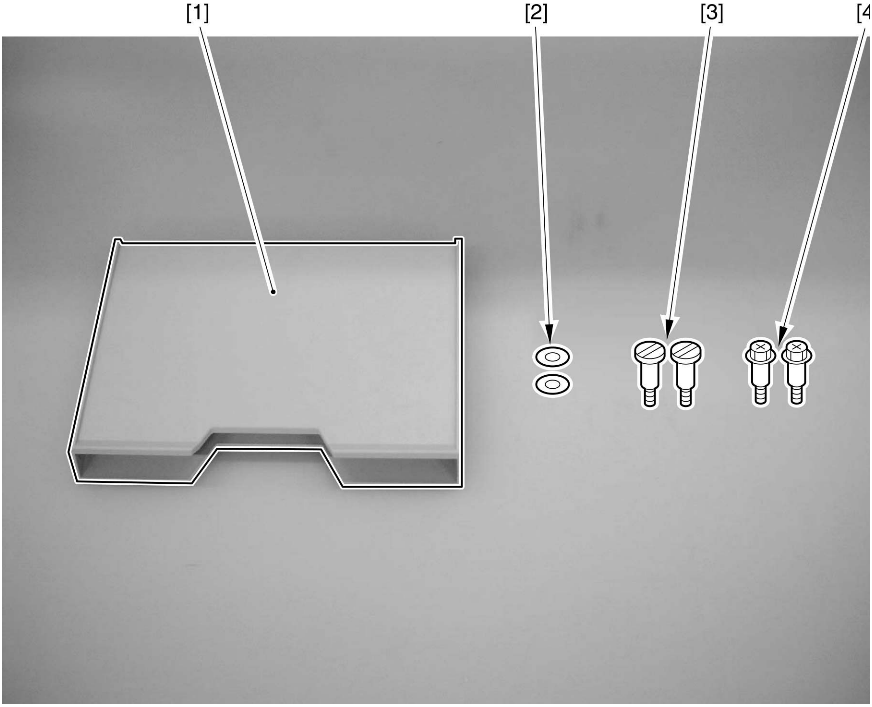
9)Connect the power cable.

10)Turn on the main power switch.

11)Turn on the control panel power switch.

2.11 Installing the Document Tray-J1

2.11.1 Checking the Contents



F-2-170

T-2-9

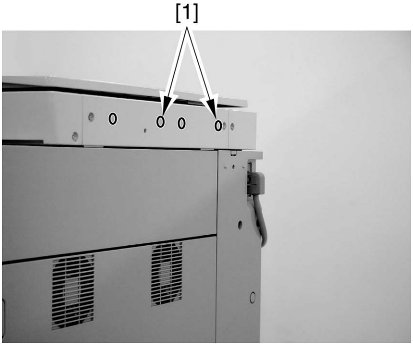
[1]	Document Tray	1 unit
[2]	Washer Washer (for iR C3200 Series)	2 pc.
[3]	Stepped screw (M4; for iR C3200 Series)	2 pc.
[4]	Stepped screw (6-mm dia. x 10.5; RS tightening; for iR C3100 Series)	2 pc.

2.11.2 Installation

1)Remove the 2 dressing stickers [1] from the reader cover (right).

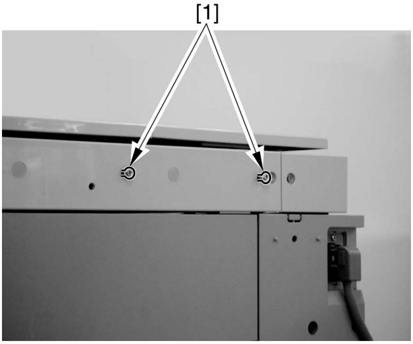
⚠ Normally, attach the stickers to the rear.

If there is a control card unit, attach them to the front.



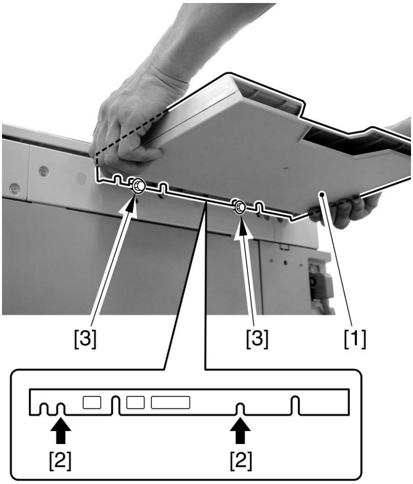
F-2-171

2)Fit the 2 included screws (6-mm dia. x 10.5; RS tightening) [1] to the reader cover (right).



F-2-172

3)Hook the slots [2] in the reinforcing plate of the Document Tray [1] on he 2 screws (6-mm dia. x 10.5; RS tightening) [3] that have previously been fitted.



F-2-173

Chapter 3 Basic Operation

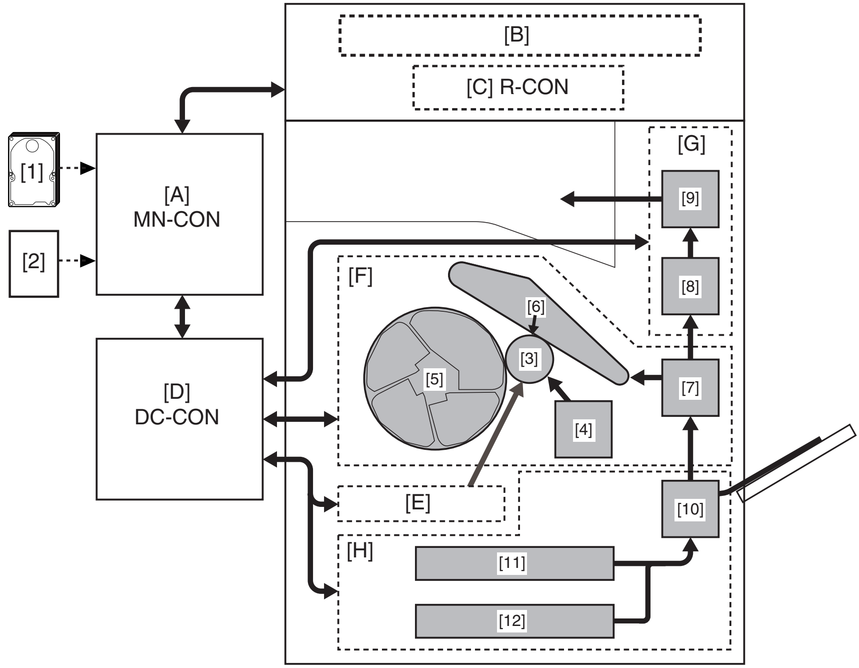
Contents

3.1 Construction 3-1
  3.1.1 Functional construction 3-1
  3.1.2 Connections Among Major PCBs 3-2
  3.1.3 DC Controller PCB 3-4
3.2 Basic Sequence..3-6
  3.2.1 Basic Sequence of Operations at Power-On 3-6
  3.2.2 Basic Sequence of Operations for a Print Job (full color) 3-8
  3.2.3 Basic Sequence of Operations for a Print Job (mono color).............3-10

3.1 Construction

3.1.1 Functional construction

The machine may broadly be divided into the following functional blocks: general control block, original exposure block, reader control block, printer control block, laser exposure block, image formation block, pickup/feed block, and fixing/delivery block. For detailed discussions of individual functions, see the chapters that follow.



F-3-1

T-3-1

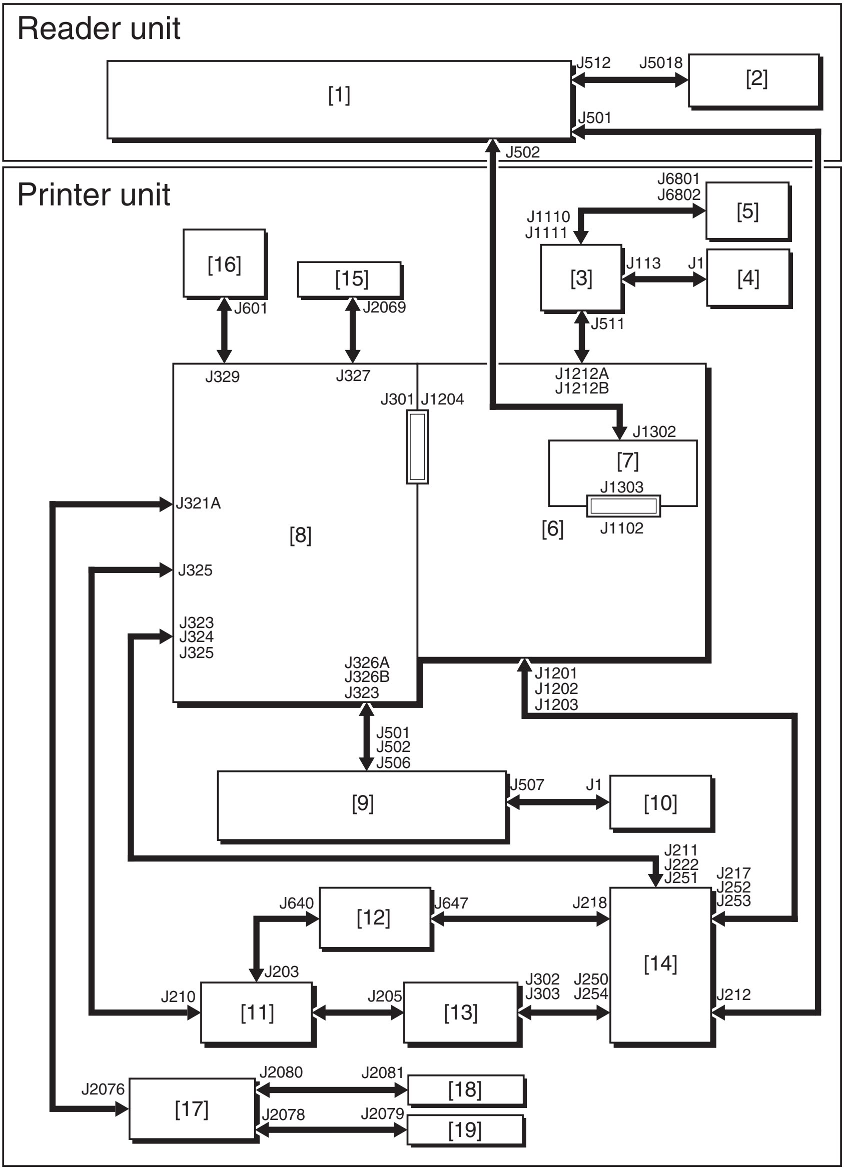
[A]	General Control System	[1]	HDD
	main controller PCB	[2]	Accessories PCB

[B] Original Exposure System
[C] Reader Unit Controller System
reader controller PCB
[D] Printer Unit Control System
DC controller PCB
[E] Laser Exposure System
[F] Image Formation System
[G] Fixing/Delivery System
[H] Pickup/Feed System

[3] Photosensitive drum
[4] Charging
[5] Development
[6] Primary transfer
[7] Secondary transfer/Separation
[8] Fixing
[9] Delivery/Reversal/Duplexing
[10] Pickup
[11] Cassette 1
[12] Cassette 2

3.1.2 Connections Among Major PCBs

The following is a diagram showing connections among individual PCBs:


Reader unit
[1]
J512
J5018
[2]
J501
J502
Printer unit
J6801
J6802
[5]
J1110
J1111
[16]
[15]
[3]
J113
J1
[4]
J601
J2069
J511
J329
J327
J1212A
J1212B
J301
J1204
J1302
[7]
J1303
J321A
[8]
[6]
J1102
J325
J323
J324
J325
J326A
J326B
J323
J1201
J1202
J1203
J501
J502
J506
J507
J1
[9]
[10]
J211
J222
J251
J217
J252
J253
J640
[12]
J647
J218
[14]
J203
J302
J303
J250
J254
J210
[11]
J205
[13]
J212
J2080
J2081
J2076
[17]
[18]
J2078
J2079
[19]

F-3-2

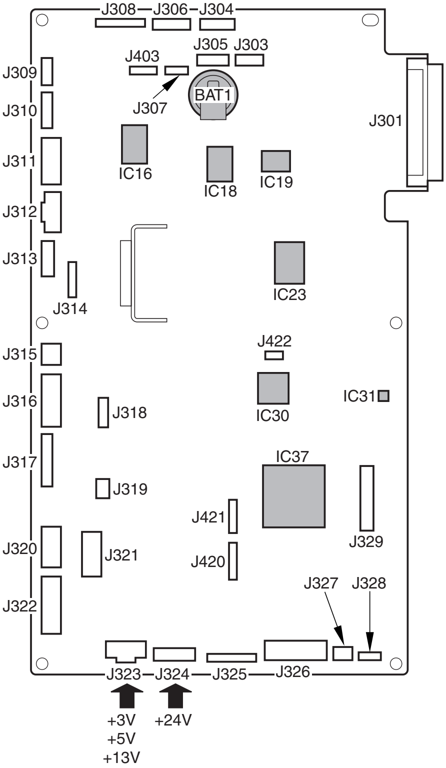
T-3-2

[1]	Reader controller PCB	[11]	AC driver PCB
[2]	CIS inverter PCB	[12]	Accessories power supply PCB
[3]	Control panel CPU PCB	[13]	Printer power supply PCB
[4]	Control panel inverter PCB	[14]	Controller power supply PCB
[5]	Keypad PCB	[15]	BD PCB
[6]	Main control PCB (main)	[16]	Laser driver PCB
[7]	Main controller PCB (sub)	[17]	Cassette size relay PCB
[8]	DC controller PCB	[18]	Upper cassette size PCB
[9]	High-voltage PCB (main)	[19]	Lower cassette size PCB
[10]	High-voltage PCB (sub)		

Memo:
The arrows in the diagram indicate PCB connections, not the direction of signals.

3.1.3 DC Controller PCB

The machine's DC controller PCB has the following functional construction:


J308
J306
J304
J305
J303
J403
J309
J307
BAT1
J310
J301
J311
IC16
IC18
IC19
J312
J313
IC23
J314
J422
J315
J316
J318
IC30
IC31
IC37
J317
J319
J421
J329
J320
J321
J420
J327
J328
J322
J323
J324
J325
J326
+3V
+5V
+13V
+24V

F-3-3

T-3-3

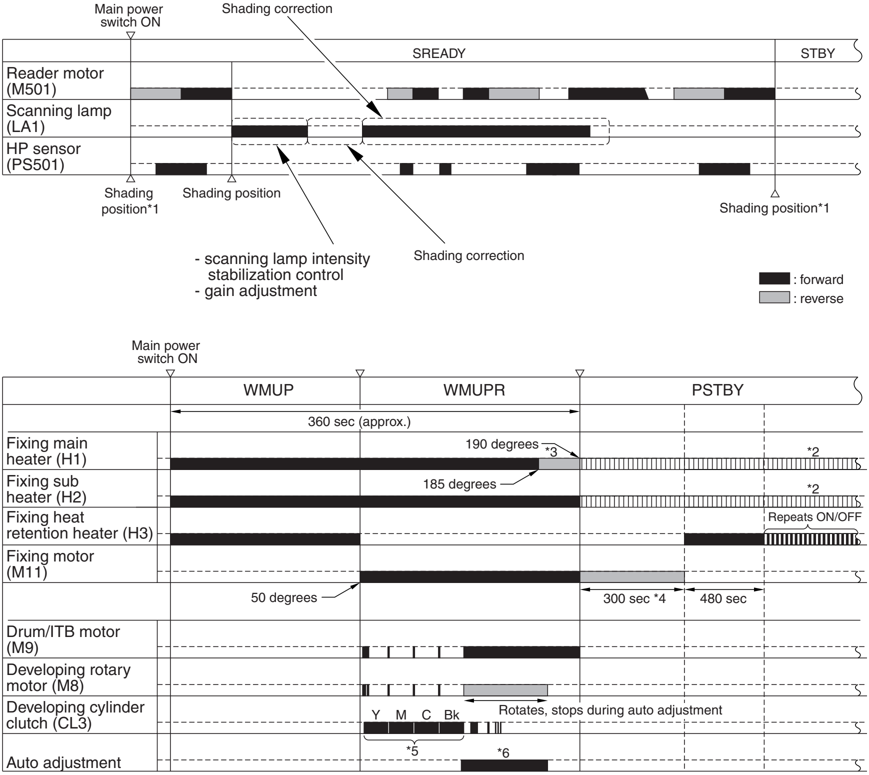
BAT1:	battery for SRAM (IC18) backup
IC23:	CPU (equipped with boot ROM)
IC31:	reset IC
IC16:	flash ROM (holds system software)
IC18:	SRAM (retains settings data, e.g., service mode settings)
IC19,30:	used for clutch control, solenoid control, fan control
IC37:	used for high-voltage control, fixing control, motor control, image control, PWM control (for laser/high voltage)

3.2 Basic Sequence

3.2.1 Basic Sequence of Operations at Power-On

T-3-4

Period	Description
WMUP (warm-up)	the drive system is at rest; lasts until the fixing roller reaches 50 degrees Celcius.
SREADY (scanner ready)	from when shading correction ends to when the Start key is pressed or the main power switch is turned off.
WMUPR (warm-up rotation)	the drive system goes on; lasts until the fixing roller reaches 190 degrees Celcius.
PSTBY (printer standby)	the machine is ready to accept a copy/print request signal.


Main power switch ON
Shading correction
SREADY
STBY
Reader motor (M501)
Scanning lamp (LA1)
HP sensor (PS501)
Shading position*1
Shading position
Shading position*1
- scanning lamp intensity stabilization control
- gain adjustment
Shading correction
: forward
: reverse
Main power switch ON
WMUP
WMUPR
PSTBY
360 sec (approx.)
Fixing main heater (H1)
190 degrees
*3
*2
Fixing sub heater (H2)
185 degrees
*2
Fixing heat retention heater (H3)
Repeats ON/OFF
Fixing motor (M11)
50 degrees
300 sec *4
480 sec
Drum/ITB motor (M9)
Developing rotary motor (M8)
Developing cylinder clutch (CL3)
Y M C Bk
Rotates, stops during auto adjustment
*5
*6
Auto adjustment

F-3-4

*1: if the copyboard cover (ADF) is "open," stands by at point of original size detection.

*2: uses the main or sub heater to perform temperature control (to 190 degrees Celcius) depending on the difference in the readings of the main thermistor (TH1) and the sub thermistor (TH2).

*3: if the temperature at a the start of the warm-up period is less than 170 degrees Celcius, turns off the main heater; if 170 degrees Celcius or higher, turns on the main heater.

*4: executes half-speed rotation if printing does not start at the end of the warm-up period.

*5: omits the sequence if the surface temperature of the fixing roller is 50 degrees Celcius or higher at the start of the warm-up period.

*6: as a rule, executes (image stabilization control during auto adjustment) only if the surface temperature of the fixing roller at the start of the warm-up period is less than 50 degrees Celcius.

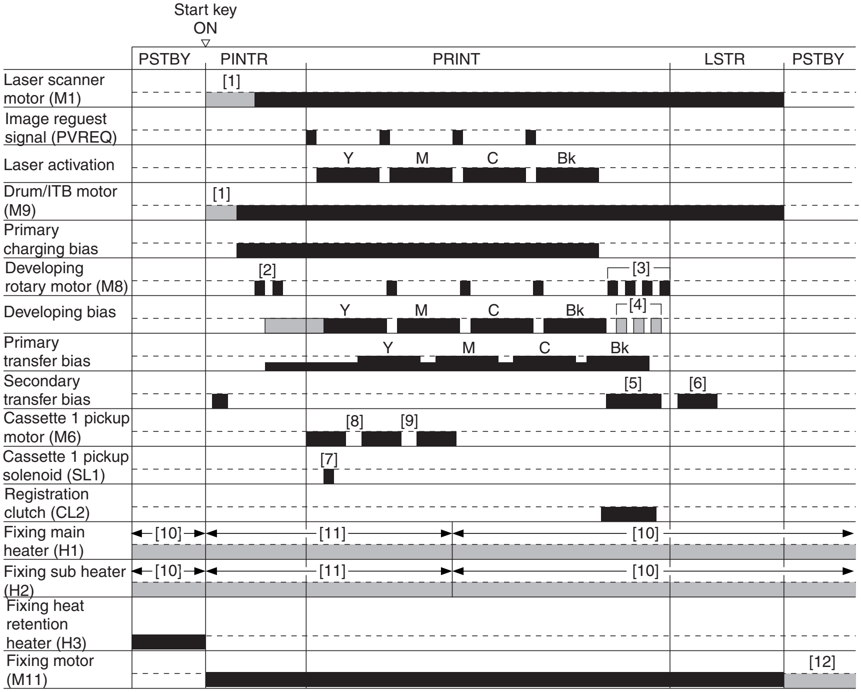
- ATR correction control
- drum film thickness detection control
- primary transfer ATVC control
- development gradation density correction control

3.2.2 Basic Sequence of Operations for a Print Job (full color)

Full color, A4, 1 copy, Cassette 1

T-3-5

Period	**Description**
PSTBY (print standby)	when the machine is ready to accept a copy/print request signal.
PINTR (initial rotation)	from when a print request signal is received to when an image signal is generated.
PRINT	from when all toner has been transferred to paper and the paper is delivered.
LSTR (last rotation)	from when the paper has been delivered to when all drive has been stopped.


Start key ON
PSTBY
PINTR
PRINT
LSTR
PSTBY
Laser scanner motor (M1)
[1]
Image reguest signal (PVREQ)
Laser activation
Y
M
C
Bk
Drum/ITB motor (M9)
[1]
Primary charging bias
Developing rotary motor (M8)
[2]
[3]
Developing bias
Y
M
C
Bk
[4]
Primary transfer bias
Y
M
C
Bk
Secondary transfer bias
[5]
[6]
Cassette 1 pickup motor (M6)
[8]
[9]
Cassette 1 pickup solenoid (SL1)
[7]
Registration clutch (CL2)
Fixing main heater (H1)
[10]
[11]
[10]
Fixing sub heater (H2)
[10]
[11]
[10]
Fixing heat retention heater (H3)
Fixing motor (M11)
[12]

F-3-5

[1] stabilizes the rotation.

[2] makes the following moves: rotary HP>Bk point of development>Y point of development (1st color).

[3] moves to rotary HP.

[4] holds toner/carrier on the developing cylinder.

[5] transfers to paper.

[6] cleans the secondary transfer outside roller.

[7] picks up paper from the cassette.

[8] executes pre-registration.

[9] executes registration.

[10]controls to 190 degrees Celcius.

[11]controls to 193 degrees Celcius.

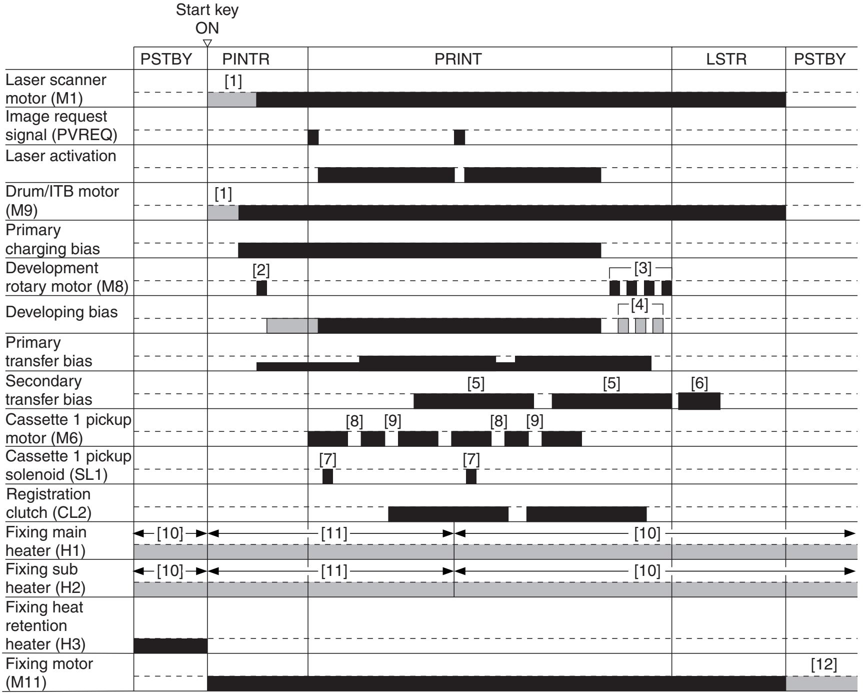
[12]executes half-speed rotation (to increase temperature of the pressure roller).

3.2.3 Basic Sequence of Operations for a Print Job (mono color)

Mono, A4, 2 copies, Cassette 1

T-3-6

Period	Description
PSTBY (print standby)	whine the machine is ready to accept a copy/print request signal.
PINTR (initial rotation)	from when a print request signal has been received to when an image signal is generated.
PRINT	from when all toner has been transferred to paper to when the paper is delivered.
LSTR (last rotation)	from when the paper has been delivered to when all drive is stopped.



F-3-6

[1] stabilizes the rotation.

[2] makes the following moves: rotary HP>point of Bk development

[3] moves to rotary HP.

[4] retains toner/carrier on the developing cylinder.

[5] transfers to paper.

[6] executes secondary transfer outside roller cleaning.

[7] picks up paper from the cassette.

[8] executes pre-registration.

[9] executes registration.

[10]controls to 190 degrees Celcius.

[11]controls to 193 degrees Celcius.

[12]performs half-speed rotation (to increase the temperature of the pressure roller).

Chapter 4 Main Controller

Contents

4.1 Construction 4-1
4.1.1 Construction and Functions...4-1
4.2 Construction of the Electrical Circuitry 4-3
4.2.1 Main Controller PCB (main)...4-3
4.2.2 Main Controller PCB (sub) 4-5
4.2.3 Expansion Bus PCB 4-6
4.2.4 SRAM PCB 4-7
4.2.5 HDD 4-7
4.3 Start-Up Sequence...4-11
4.3.1 Overview 4-11
4.3.2 Start-Up Sequence..4-12
4.4 Actions when HDD Error..4-15
4.4.1 E602 in Detail 4-15
4.5 Image Processing 4-21
4.5.1 Outline of the Flow of Image Processing...4-21
4.5.2 Construction of the Image Processing Module 4-21
4.5.3 Reader Input Image Processing...4-22
4.5.4 Compression/Decompression and Editing Blocks 4-23
4.5.5 Printer Output Image Processing 4-24
4.6 Flow of Image Data...4-27
4.6.1 Flow of Image Data (copier function)...4-27
4.6.2 Flow of Image Data (Box function) 4-27
4.6.3 Flow of Image Data (SEND function) 4-28
4.6.4 Flow of Image Data (fax transmission)..4-29
4.6.5 Image Data Flow for Fax Reception Functions 4-30
4.6.6 Flow of Image Data (PDL function) 4-31
4.7 Parts Replacement Procedure..4-33
4.7.1 Controller Box..4-33
4.7.1.1 Removing the Rear Cover (right)...4-33
4.7.1.2 Removing the Controller Box Cover 4-33
4.7.1.3 Removing the Left Cover (rear)..4-34
4.7.1.4 Removing the Controller Fan...4-34

4.7.1.5 Removing the Controller Box 4-34
4.7.2 Main Controller PCB (main) 4-37
4.7.2.1 Removing the Rear Cover 4-37
4.7.2.2 Removing the Controller Box Cover 4-37
4.7.2.3 Removing the Left Cover (rear) 4-38
4.7.2.4 Removing the Main Controller PCB (main) 4-38
4.7.2.5 After Replacing the Main Controller PCB (main) 4-41
4.7.3 Main Controller PCB (sub) 4-42
4.7.3.1 Removing the Rear Cover (right) 4-42
4.7.3.2 Removing the Controller Box Cover 4-42
4.7.3.3 Removing the Left Cover (rear) 4-43
4.7.3.4 Removing the Main Controller PCB (sub) 4-43
4.7.4 Expansion Bus PCB 4-43
4.7.4.1 Removing the Rear Cover (right) 4-43
4.7.4.2 Removing the Controller Box Cover 4-44
4.7.4.3 Removing the Left Cover (rear) 4-44
4.7.4.4 Removing the SRAM Board 4-45
4.7.4.5 Removing the Expansion Bus PCB 4-45
4.7.4.6 After Replacing the Expansion Bus PCB 4-45
4.7.5 SRAM PCB 4-46
4.7.5.1 Removing the Rear Cover (right) 4-46
4.7.5.2 Removing the Controller Box Cover 4-46
4.7.5.3 Removing the SRAM Board 4-47
4.7.5.4 After Replacing the SRAM Board 4-47
4.7.6 UFR Board 4-48
4.7.6.1 Removing the Rear Cover (right) 4-48
4.7.6.2 Removing the Controller Box Cover 4-48
4.7.6.3 Removing the Left Cover (rear) 4-49
4.7.6.4 Removing the UFR Board 4-49
4.7.7 Ethernet Board 4-49
4.7.7.1 Removing the Rear Cover (right) 4-49
4.7.7.2 Removing the Controller Box Cover 4-50
4.7.7.3 Removing the Left Cover (rear) 4-50
4.7.7.4 Removing the Ethernet Board 4-51
4.7.8 HDD 4-51
4.7.8.1 Handling the HDD 4-51

4.7.8.2 Removing the Rear Cover 4-51
4.7.8.3 Removing the Controller Box Cover 4-52
4.7.8.4 Removing the HDD..4-52
4.7.8.5 After Replacing the HDD...4-53
4.7.9 Controller Fan 4-54
4.7.9.1 Removing the Rear Cover (right)..4-54
4.7.9.2 Removing the Left Cover (rear)..4-55
4.7.9.3 Removing the Controller Fan..4-55

4.1 Construction

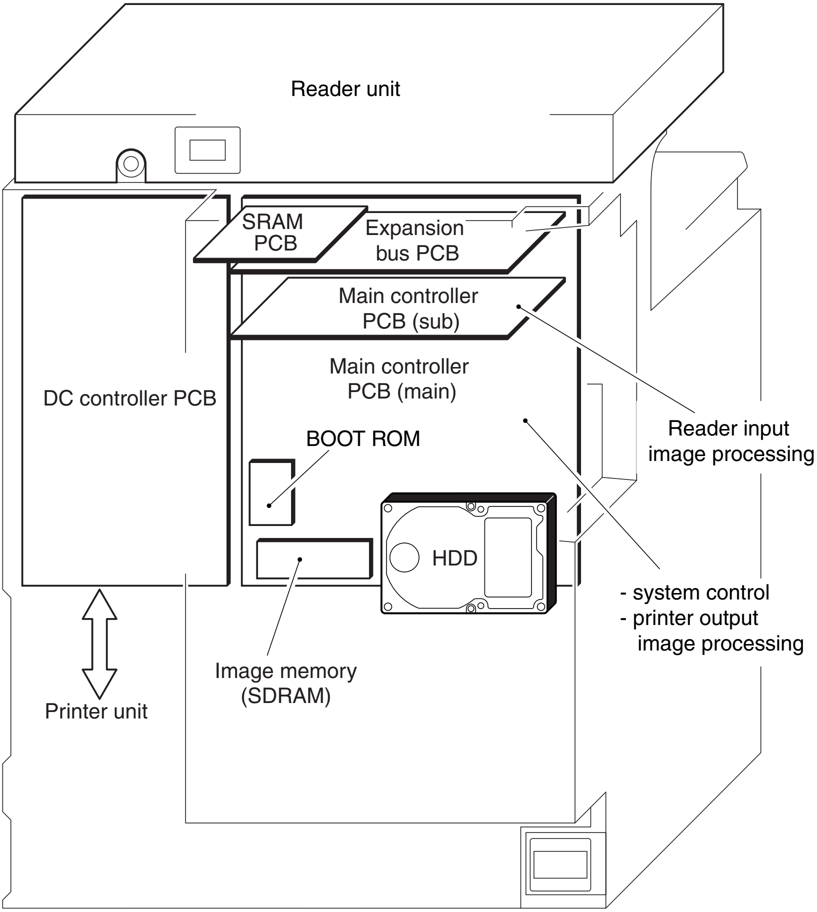
4.1.1 Construction and Functions

The machine's main controller block consists of the following components and provides the functions indicated:

T-4-1

Item	**Description**
Main controller PCB (main)	controls the system, controls the memory, controls image processing for output to the printer
Main controller PCB (sub)	processes images from the reader unit
Expansion bus PCB	serves as the interface for the color LCD controller, card reader, etc.
SRAM PCB	retains service mode settings and HDD control information
Image memory (SRAM)	retains image data temporarily
Boot ROM	stores programs used for booting
HDD	stores system software, retains image data for Box/fax functions

Memory control

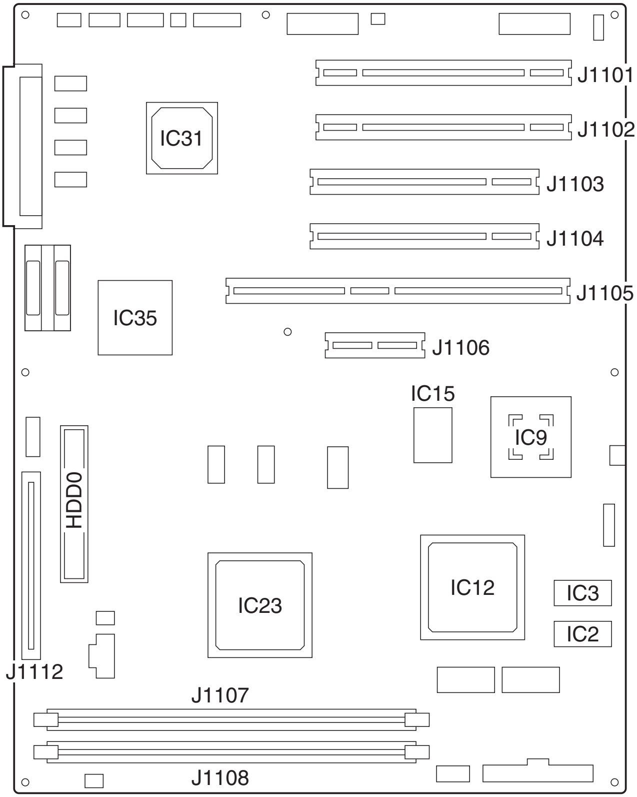

Reader unit
SRAM PCB
Expansion bus PCB
Main controller PCB (sub)
Main controller PCB (main)
DC controller PCB
BOOT ROM
HDD
Reader input image processing
- system control
- printer output image processing
Image memory (SDRAM)
Printer unit

F-4-1

4.2 Construction of the Electrical Circuitry

4.2.1 Main Controller PCB (main)

The following shows the major control functions of the main controller PCB (main) grouped according to jack/IC:


J1101
J1102
IC31
J1103
J1104
J1105
IC35
J1106
IC15
IC9
HDD0
IC23
IC12
IC3
IC2
J1112
J1107
J1108

F-4-2

T-4-2

Jack No.	**Description**
J1101	expansion bus PCB slot
J1102	main controller PCB (sub) connection slot
J1103	image conversion board connection slot
J1104	USB interface board/TokenRing connection slot
J1105	UFR board/OPEN I/F board connection slot
J1106	Ethernet board connection slot
J1107	image memory (SDRAM, 512 MB; standard)
J1108	image memory (SDRAM, 256 MB; optional for 100-V model or standard for 120/230-V model)
J1112	boot ROM connection slot
HDD0	hard disk connection connector

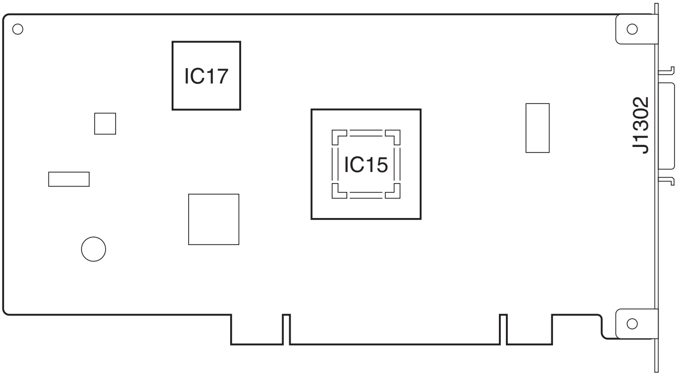
T-4-3

IC No.	**Description**
IC9	controls the processing of images coming from IC12 for output to the printer.
IC12	controls image input/output functions, image rotation function, resolution conversion function, and binary processing function.
IC15	controls the conversion of 4-bit serial image data coming from IC9 into 8-bit parallel image data; keeps track of video count.
IC23	CPU: system control raster JPEG compression/decompression network controller PCI bus controller

IC No.	Description
	ROM/RAM controller
	serial communication controller
IC31	I/O processing of signals
IC35	HDD controller

4.2.2 Main Controller PCB (sub)

The following shows the major functions of the main controller PCB (sub) grouped according to jack/IC:



F-4-3

T-4-4

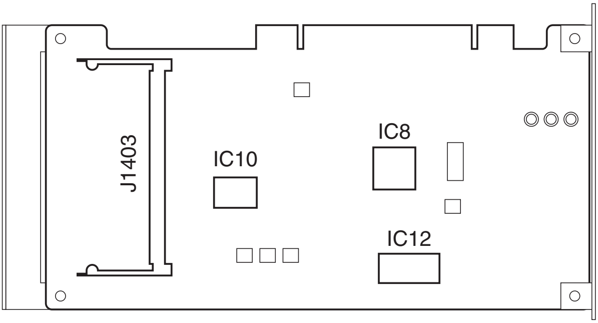
Jack No.	Description
J1302	connector for reader unit communication

T-4-5

IC No.	Description
IC15	controls image processing of input image data from the reader unit.
IC17	controls indication of images read by the scanner.

4.2.3 Expansion Bus PCB

The following shows the major functions of the expansion bus PCB grouped according to jack/IC:



F-4-4

T-4-6

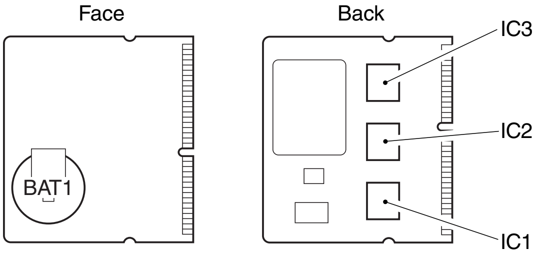
Jack No.	Description
J1403	connector for the SRAM PCB.

T-4-7

IC No.	Description
IC8	LCD controller
IC10	NE controller, coin vendor, interface ASIC for card reader connection
BAT	backup battery for SRAM

4.2.4 SRAM PCB

The following is a discussion of the major control functions of the SRAM indicated with reference to ICs:



F-4-5

T-4-8

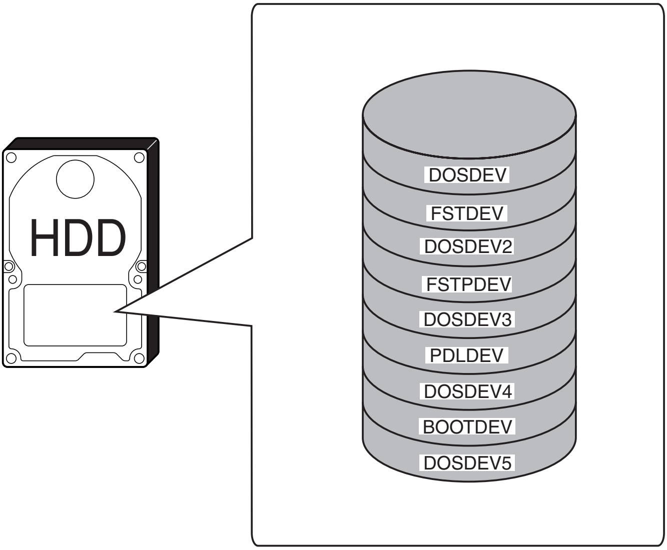
IC No.	Description
IC1,2,3 (SRAM)	retains control information on the image data stored on the HDD; retains service mode settings data and Additional Function settings data

4.2.5 HDD

The HDD is formatted so that there are 9 partitions (blocks) with specific tasks assigned to them:

T-4-9

Partition	Description
DOSDEV	retains multipurpose data
FSTDEV	retains image data
DOSDEV2	retains thumbnail display data for image data
FSTPDEV	retains image data
DOSDEV3	retains multi-purpose files (e.g., PDL spool)
PDLDEV	retains PDL-related files (font, registered form, ICC profile, PDL function color correction information file)
DOSDEV4	retains user data (address books, transfer settings)
BOOTDEV	retains system software
DOSDEV5	for future expansion


HDD
DOSDEV
FSTDEV
DOSDEV2
FSTPDEV
DOSDEV3
PDLDEV
DOSDEV4
BOOTDEV
DOSDEV5

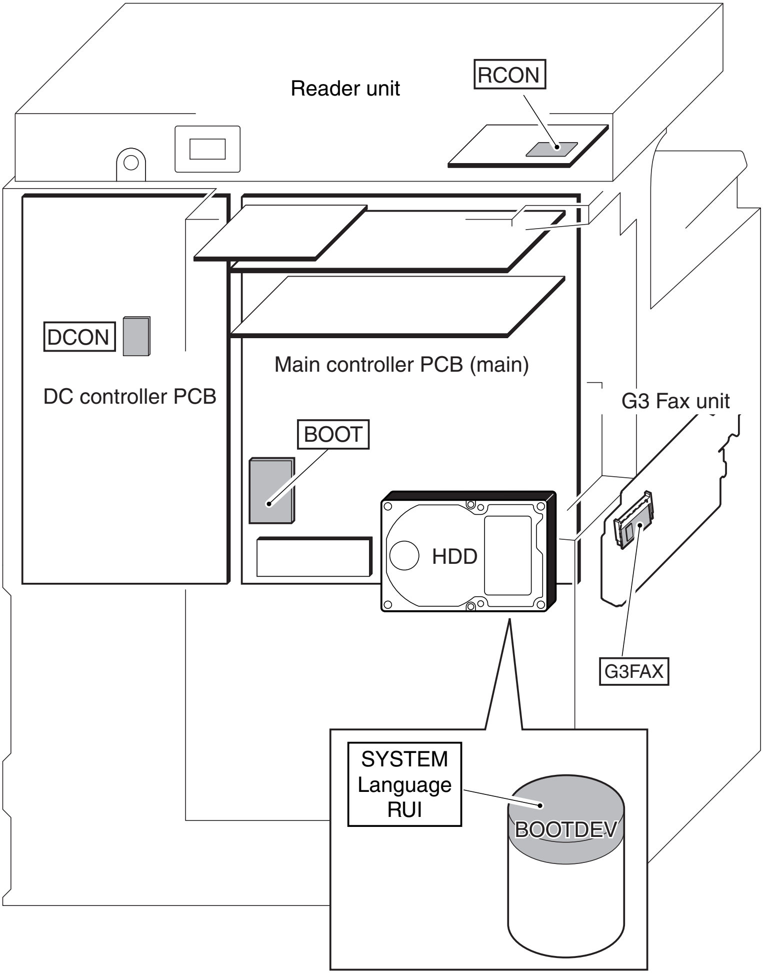
F-4-6

The machine's system software consists of the following:

T-4-10

System software	Description	Location	Remarks
System	system model (controls comprehensive system functions)	HDD (BOOTDEV)	
Language	language module (controls LCD)	HDD (BOOTDEV)	
RUI	language module (controls remote UI)	HDD (BOOTDEV)	
Boot	starts up the machine	boot ROM	DIMM
G3FAX	controls G3 fax	G3 fax board	DIMM
Dcon	controls the DC controller	DC control PCB	soldered flash ROM

System software	Description	Location	Remarks
Rcon	controls the reader controller	reader controller PCB	soldered flash ROM

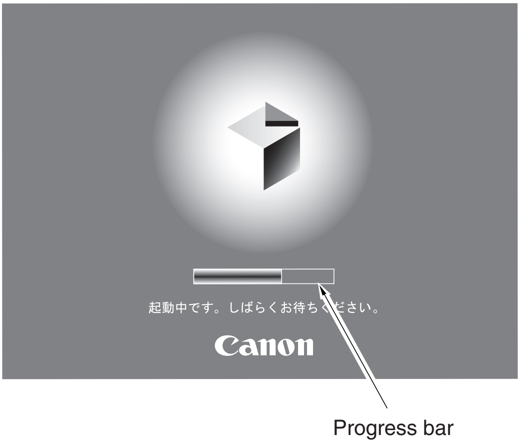

Reader unit
RCON
DCON
DC controller PCB
Main controller PCB (main)
BOOT
HDD
G3 Fax unit
G3FAX
SYSTEM
Language
RUI
BOOTDEV

F-4-7

4.3 Start-Up Sequence

4.3.1 Overview

The system software used to control the operation of the machine is stored on the HDD.
When the machine is started up, the CPU on the main controller PCB reads the system software from the HDD into the image memory (SDRAM) of the main controller PCB for use as instructed by the boot program of the boot ROM.
The following screen remains on the control panel white the CPU is reading the system memory from the HDD into the image memory (SDRAM), with the bar indicating the progress of the startup sequence.



F-4-8

⚠Never turn off the main power while the progress bar is indicated. The CPU is accessing the HDD, and turning off the power can cause a fault (E602) on the HDD.

4.3.2 Start-Up Sequence

<Boot ROM Area>

- Self-Diagnostic Program (interval 1)

When the main power switch is turned on, the CPU of the main controller PCB runs a self-diagnostic program, which checks the condition of the image memory (SDRAM) and the HDD. If a fault is found, the machine will indicate its presence by an error code.

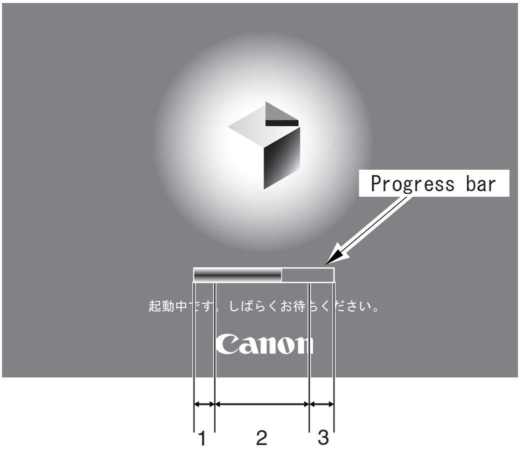
- Boot Program (interval 2)

When the self-diagnostic program ends normally, the CPU on the main controller PCB executes the boot program to read the system software from the HDD, writing it to the system area of the image memory (SDRAM).

<Image Memory (SDRAM) Area> (interval 3)

The machine initializes its various parts using the system software written into memory by the boot program (i.e., I/F settings for the main controller).

When all ends normally, the machine becomes ready for a job (indicating the Operation screen on the control panel, and changing the Start LED key from red to green).



F-4-9

- Self diagnosis program being executed

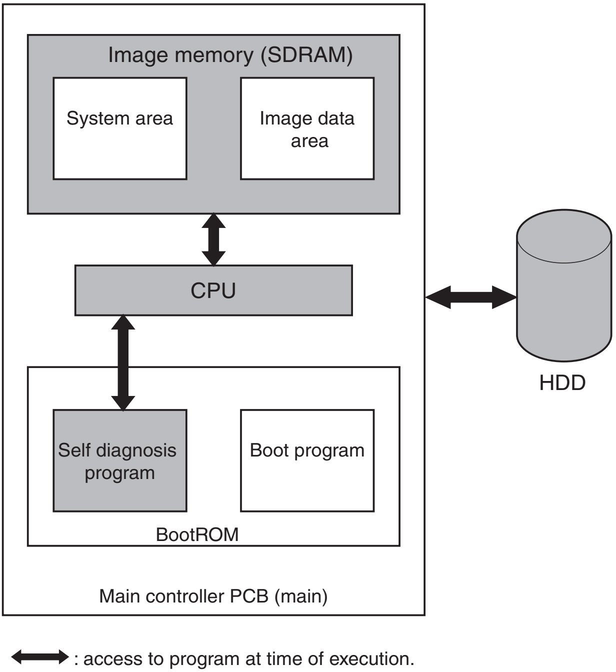


Image memory (SDRAM)
System area
Image data area
CPU
HDD
Self diagnosis program
Boot program
BootROM
Main controller PCB (main)
: access to program at time of execution.

F-4-10

- Boot Program in Execution

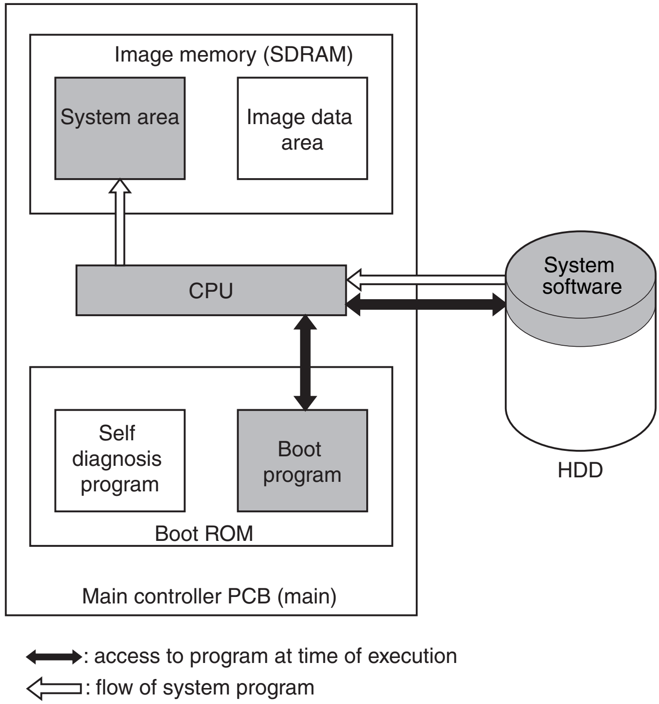


Image memory (SDRAM)
System area
Image data area
CPU
System software
HDD
Self diagnosis program
Boot program
Boot ROM
Main controller PCB (main)
: access to program at time of execution
: flow of system program

F-4-11

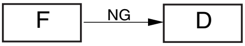
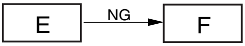
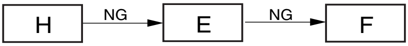
4.4 Actions when HDD Error

4.4.1 E602 in Detail

If the machine suffers a fault associated with E602-xxyy, it calls for different remedial actions as identified by the sub code.

⚠**if E602-xxyy is indicated, be sure always to turn off and then on the machine (so that it will run auto recovery sequence).**

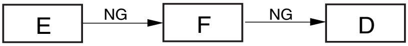
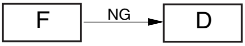
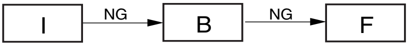
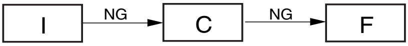
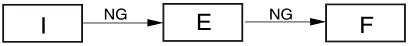
T-4-11

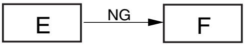
xx	Partition	yy	Description
00	HDD as a whole	01	The machine cannot recognize the HDD. The machine cannot find BOOTDEV at time of startup. Remedy: Turn off the main power, and check the connection of the 2 types of cables (power, IDE) connecting to the HDD; then, turn on the power. When doing so, check to see if the HDD rotates and if the power is supplied. 
		02	The machine cannot find the system software for the CPU of the main controller (main) in BOOT DEV. Remedy: 
		03	The machine detects a read error sector while it is reading data from BOOTDEV. Remedy: 
		06	The machine cannot find the system software for the CPU of the main controller (sub) in BOOTDEV.

xx	Partition	yy	Description
			Remedy: $\boxed{E}\xrightarrow{NG}\boxed{F}$
		07	The machine cannot find an appropriate ICCProfile in BOOTDEV/ PDLDEV. Remedy: $\boxed{E}\xrightarrow{NG}\boxed{F}$

T-4-12

xx	Partition	yy	Description
01	DOSDEV	01, 02	The machine has encountered a read error or a file system error while starting up. Remedy: $\boxed{I}\xrightarrow{NG}\boxed{B}\xrightarrow{NG}\boxed{F}$ if xxyy is 0701, 0702. Remedy: Ask the user to use the RUI to collect address book data, transfer settings, and user mode data. $\boxed{J}\xrightarrow{NG}\boxed{C}\xrightarrow{NG}\boxed{F}$ if xxyy is 0801, 0802. Remedy: $\boxed{J}\xrightarrow{NG}\boxed{E}\xrightarrow{NG}\boxed{F}$ if xxyy is FF01, FF02. Remedy: $\boxed{A}\xrightarrow{NG}\boxed{E}\xrightarrow{NG}\boxed{F}$
02	FSTDEV		
03	DOSDEV2		
04	FSTPDEV		
05	DOSDEV3		
06	PDLDEV		
07	DOSDEV4		
08	BOOTDEV		
09	DOSDEV5		
FF	not identified		

xx	Partition	yy	Description
		03	The machine has encountered an HDD contact fault or, operating system error. Remedy: Turn off the main power, and check the 2 types of cable (power, IDE) connecting to the HDD; then, turn on the main power. While doing so, check to see if the HDD rotates and if power is supplied. 
		11,21	The machine has encountered an HDD contact fault. Remedy: Turn off the main power, and check the 2 types of cable (power, IDE) connecting to the HDD; then,turn on the power. While doing so, check to see if the HDD rotates and if the power is supplied. 
		13,25	The machine has encountered a read error. Remedy:  if xxyy is 0713, 0725. Remedy:  if xxyy is 0813, 0825. Remedy: 
		10,12,14,22,23, 24	The machine has encountered a system error or a packet data error.

xx	Partition	yy	Description
			Remedy: 

A :

1) Make the following selections, and enter '1': COPIER>FUNCTION>SYSTEM>CHK-TYPE.

2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HDCHECK*.

3) When done, turn off and then on the main power.

B :

1) Find the appropriate CHK-TYPE from the table 'HDD Format' ; then, make the followingselections, and type: COPIER>FUNCTION>SYSTEM>CHK-TYPE.

2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CLEAR.

3) When done, turn off and then on the main power.

C :

1)** Start up the machine in normal mode (i.e., turn on the main power while pressing the 1 and 7 keys ; then, make the following selections, and press the OK key: COPIER>FUNCTION>SYSTEM>DOWNLOAD).

2) Execute formatting of DOSDEV4 using the Service Support Tool.

3) When done, turn off and then on the main power.

D:

1) Replace the main controller (main) board.

2) Remove the image memory (SDRAM) and the boot ROM from the previous board, and mount them on the new board.

E:

1)** Start up the machine in safe mode (i.e., turn on the power while pressing the 2 and 8 keys).

2) Format the HDD (ALL) using the Service Support Tool, and download the system software (SYSTEM, LANG, RUI).

3) When done, turn off and then on the main power.

F:

1)** Replace the HDD, and start up the machine in safe mode (i.e., turn on the main power while pressing the 2 and 8 keys).
2) Format the HDD (ALL) using the Service Support Tool, and download the system software (SYSTEM, LANG, RUI).
3) When done, turn off and then on the main power.

G:

1) Make the following selections, and enter '1': COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CLEAR.
3) When done, turn off and then on the main power.

H:

1) Turn off the main power; then, turn on the main power while pressing the 1 and 9 keys (so that the machine will automatically start its remedial program*, turning the control panel solid black).

2) When done (i.e., when the control panel turns white), turn off and then on the main power.

⚠ If the machine does not run its remedial program in response to the foregoing step, go to E.

I :

1) Find the appropriate CHK-TYPE in the table "HDD Format"; then, make the following selections and enter CHK-TYPE.
2) Make the selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK*.
3) When done, turn off and then on the main power.

J:

1) Make the following selections, and enter '4': OPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK (1 to 5 min).
3) When done, turn off and then on the main power.

* Takes about 30 to 50 min.

** As necessary, ask the user to use the RUI to collect address book data, transfer settings, and user mode settings.

T-4-13

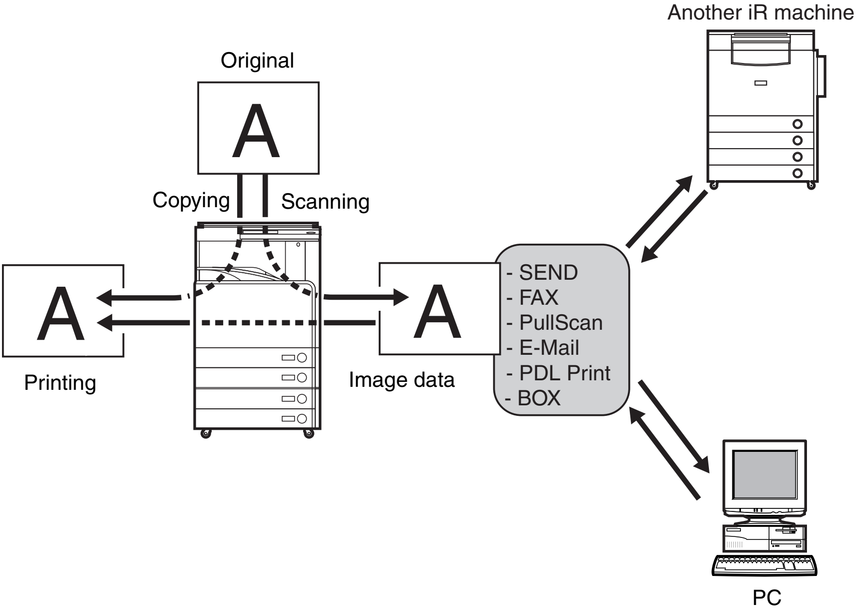
HDD Format

Partition	**CHK-TYPE**	**Typical data item deleted**
DOSDEV	1	all relating to images (reservation, Box, fax); mode memory, routine task button
FSTDEV	1	
DOSDEV2	1	
FSTPDEV	1	
DOSDEV3	2	PDL spool
PDLDEV	3	PDL-related file (font, registration form, ICCProfile)
DOSDEV4	4	user data (address book, transfer settings), system software
BOOTDEV	4	
DOSDEV5	5	-
non specific	0	-

4.5 Image Processing

4.5.1 Outline of the Flow of Image Processing

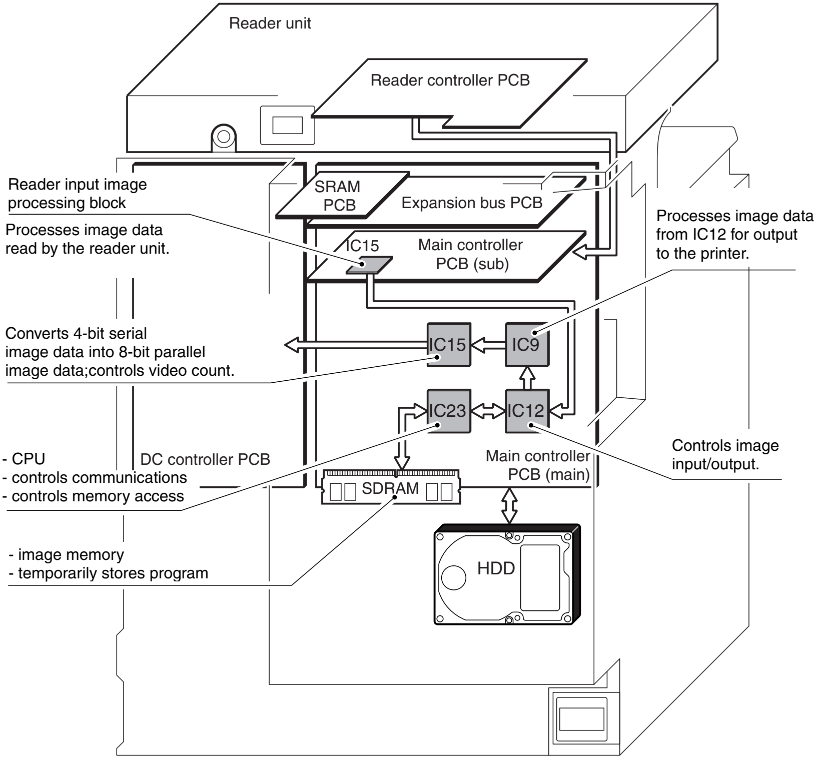
The machine processes images as follows using its various functions:


Another iR machine
Original
A
Copying
Scanning
A
Printing
A
Image data
- SEND
- FAX
- PullScan
- E-Mail
- PDL Print
- BOX
PC

F-4-12

4.5.2 Construction of the Image Processing Module

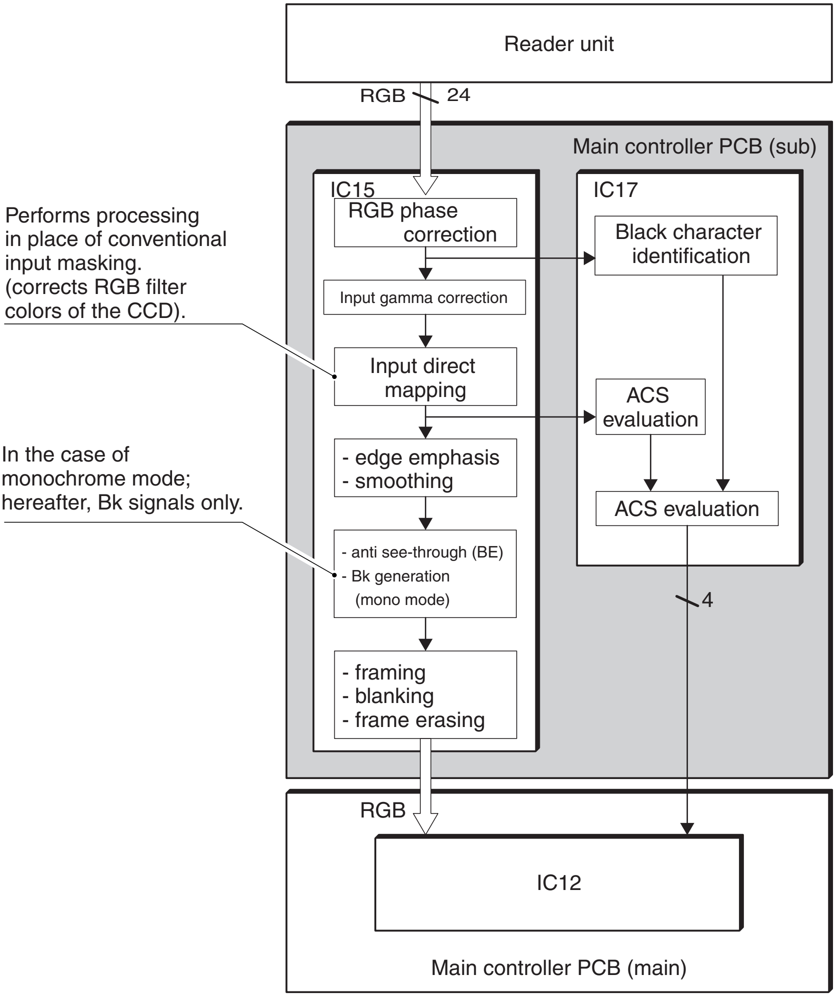
The machine's major image processing is handled by the main controller PCB (main), and the following modules are associated with the work:


Reader unit
Reader controller PCB
Reader input image processing block
Processes image data read by the reader unit.
SRAM PCB
Expansion bus PCB
IC15
Main controller PCB (sub)
Processes image data from IC12 for output to the printer.
Converts 4-bit serial image data into 8-bit parallel image data;controls video count.
IC15
IC9
IC23
IC12
- CPU
- controls communications
- controls memory access
DC controller PCB
Main controller PCB (main)
Controls image input/output.
SDRAM
- image memory
- temporarily stores program
HDD

F-4-13

4.5.3 Reader Input Image Processing

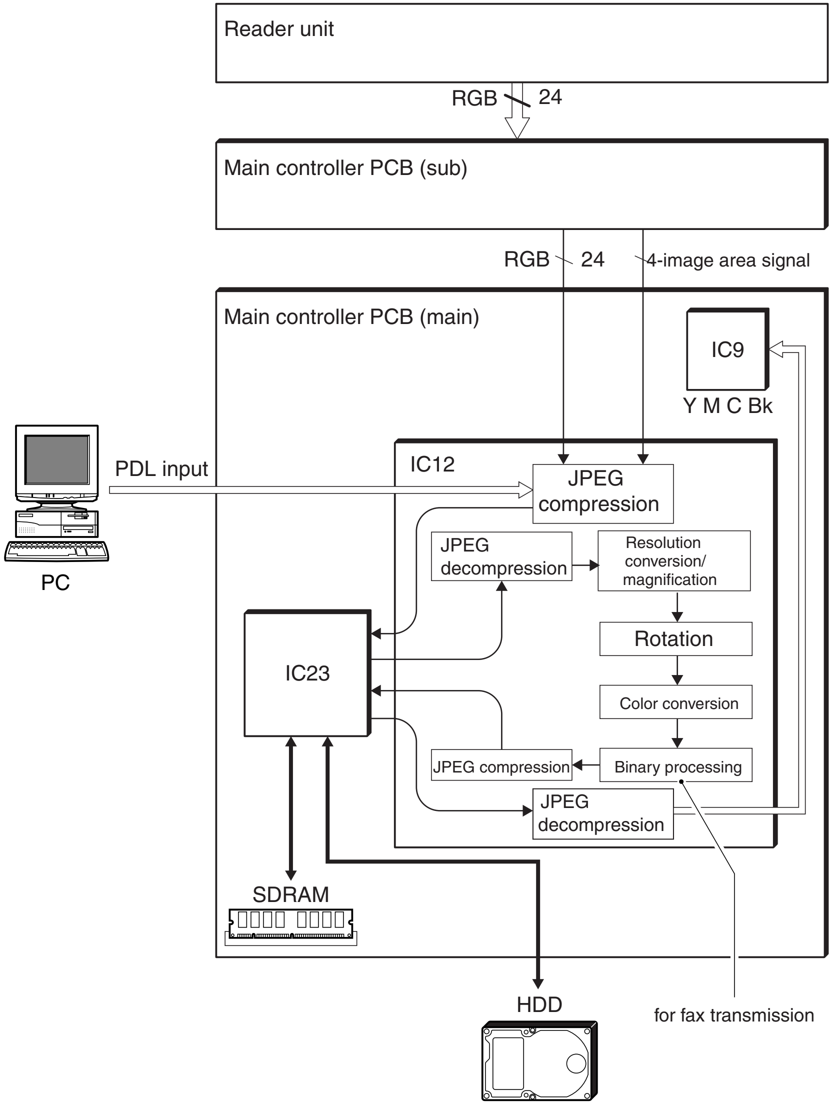
The image data (RGB) collected by the contact image sensor is processed by the main controller PCB (sub).


Reader unit
RGB
24
Main controller PCB (sub)
IC15
RGB phase correction
Input gamma correction
Input direct mapping
- edge emphasis
- smoothing
- anti see-through (BE)
- Bk generation (mono mode)
- framing
- blanking
- frame erasing
IC17
Black character identification
ACS evaluation
ACS evaluation
4
Performs processing in place of conventional input masking. (corrects RGB filter colors of the CCD).
In the case of monochrome mode; hereafter, Bk signals only.
RGB
IC12
Main controller PCB (main)

F-4-14

4.5.4 Compression/Decompression and Editing Blocks

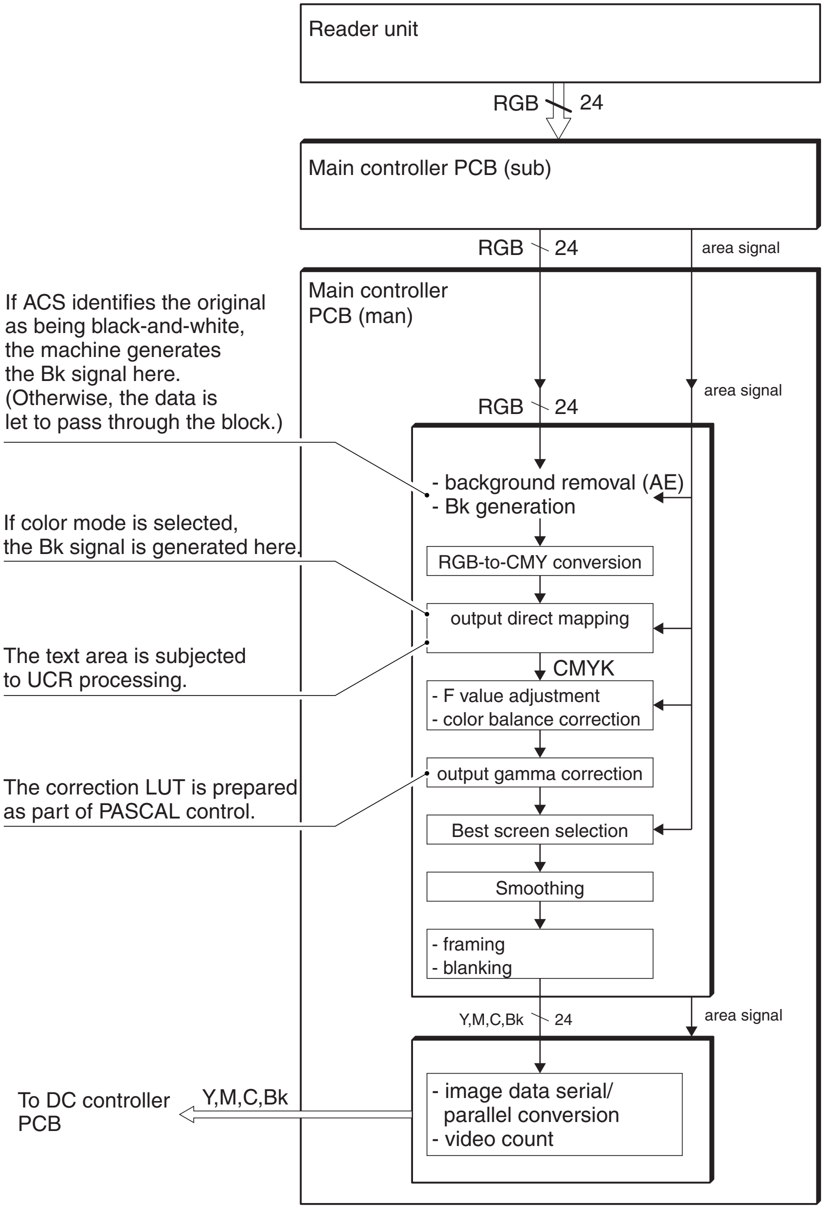
IC12 is used to compress/decompress and edit various data.


Reader unit
RGB
24
Main controller PCB (sub)
RGB
24
4-image area signal
Main controller PCB (main)
IC9
Y M C Bk
PC
PDL input
IC12
JPEG compression
JPEG decompression
Resolution conversion/ magnification
Rotation
Color conversion
IC23
JPEG compression
Binary processing
JPEG decompression
SDRAM
HDD
for fax transmission

F-4-15

4.5.5 Printer Output Image Processing

Main controller PCB processes image data from the Reader unit for output to the printer.


Reader unit
RGB
24
Main controller PCB (sub)
RGB
24
area signal
Main controller PCB (man)
RGB
24
area signal
- background removal (AE)
- Bk generation
RGB-to-CMY conversion
output direct mapping
CMYK
- F value adjustment
- color balance correction
output gamma correction
Best screen selection
Smoothing
- framing
- blanking
Y,M,C,Bk
24
area signal
- image data serial/ parallel conversion
- video count
Y,M,C,Bk
To DC controller PCB

If ACS identifies the original as being black-and-white, the machine generates the Bk signal here. (Otherwise, the data is let to pass through the block.)

If color mode is selected, the Bk signal is generated here.

The text area is subjected to UCR processing.

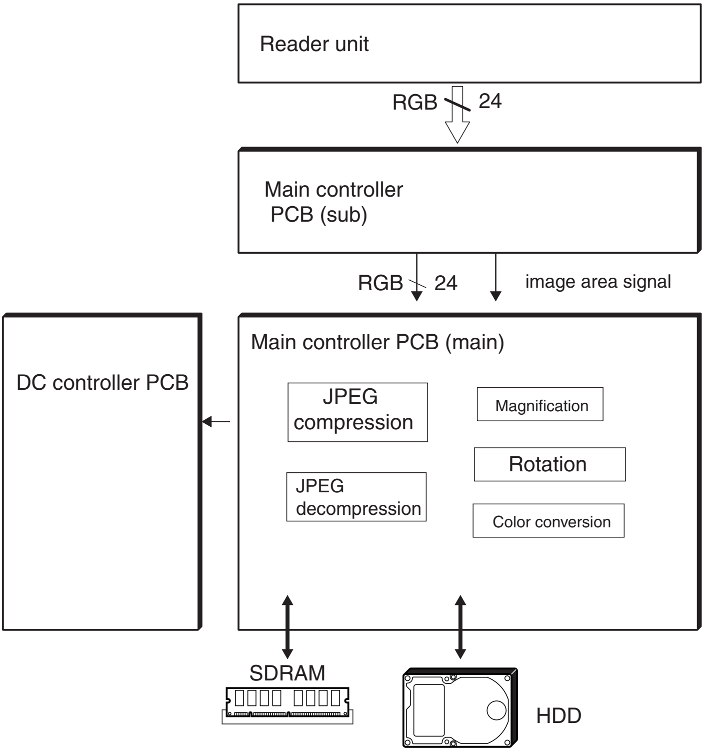
The correction LUT is prepared as part of PASCAL control.

F-4-16

4.6 Flow of Image Data

4.6.1 Flow of Image Data (copier function)

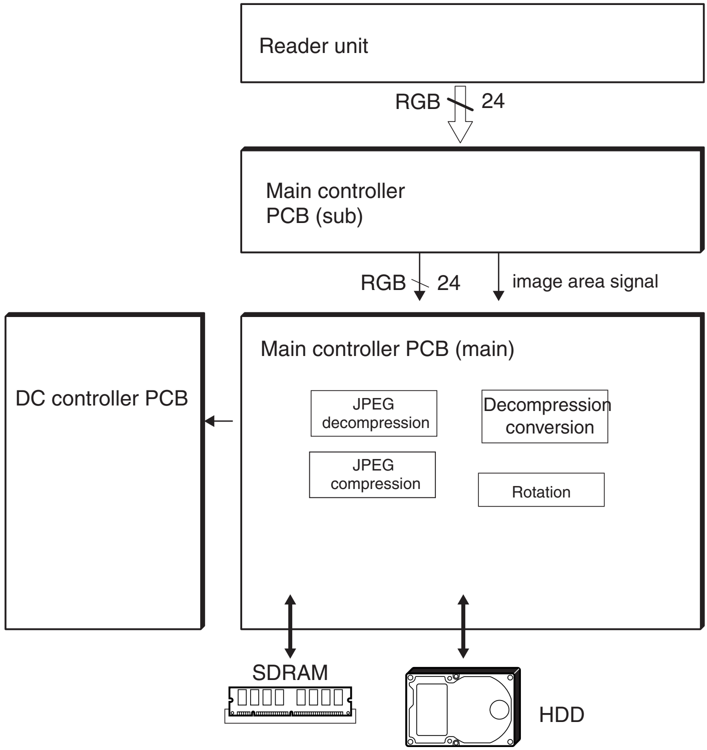
The following shows the flow of image data when copier functions are used:


Reader unit
RGB
24
Main controller PCB (sub)
RGB
24
image area signal
DC controller PCB
Main controller PCB (main)
JPEG compression
Magnification
Rotation
JPEG decompression
Color conversion
SDRAM
HDD

F-4-17

4.6.2 Flow of Image Data (Box function)

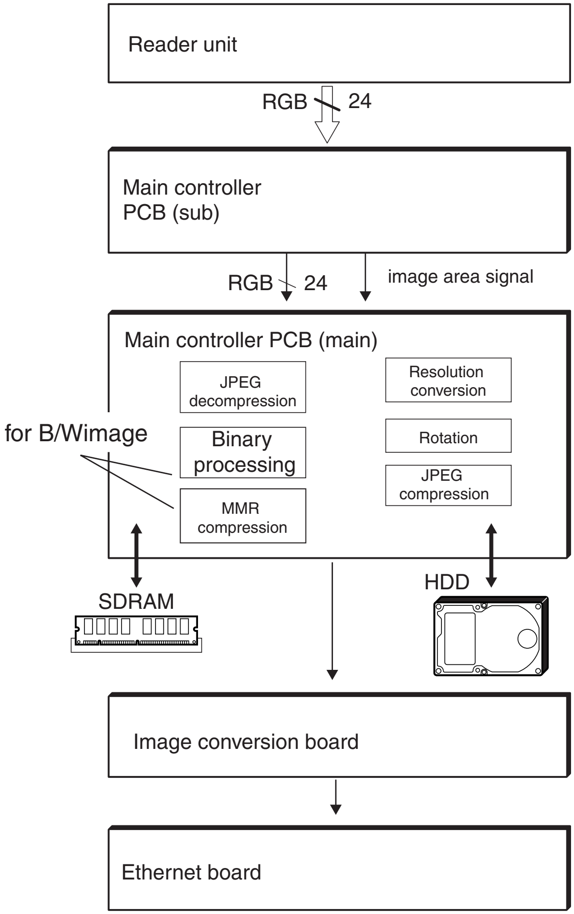
The following shows the flow of image data when Box functions are used.


Reader unit
RGB
24
Main controller PCB (sub)
RGB
24
image area signal
DC controller PCB
Main controller PCB (main)
JPEG decompression
Decompression conversion
JPEG compression
Rotation
SDRAM
HDD

F-4-18

4.6.3 Flow of Image Data (SEND function)

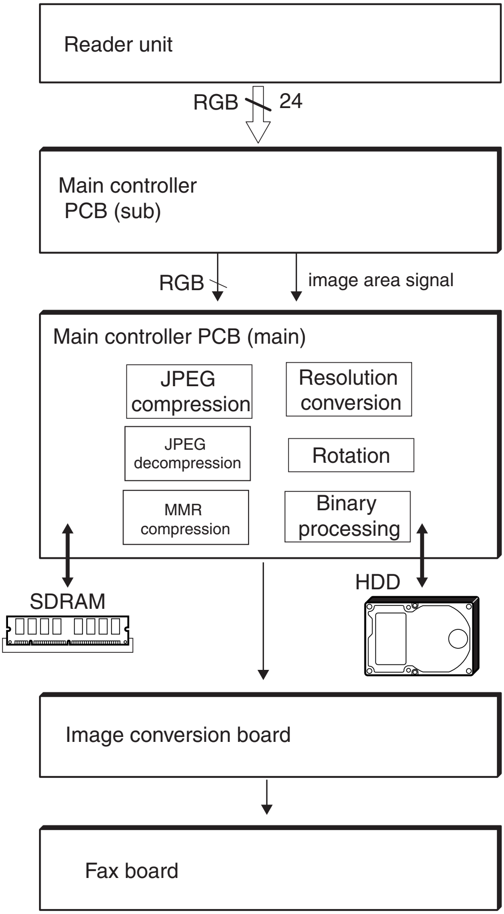
The following shows the flow of image data when SEND functions are used.


Reader unit
RGB
24
Main controller PCB (sub)
RGB
24
image area signal
Main controller PCB (main)
JPEG decompression
Resolution conversion
for B/Wimage
Binary processing
Rotation
JPEG compression
MMR compression
SDRAM
HDD
Image conversion board
Ethernet board

F-4-19

4.6.4 Flow of Image Data (fax transmission)

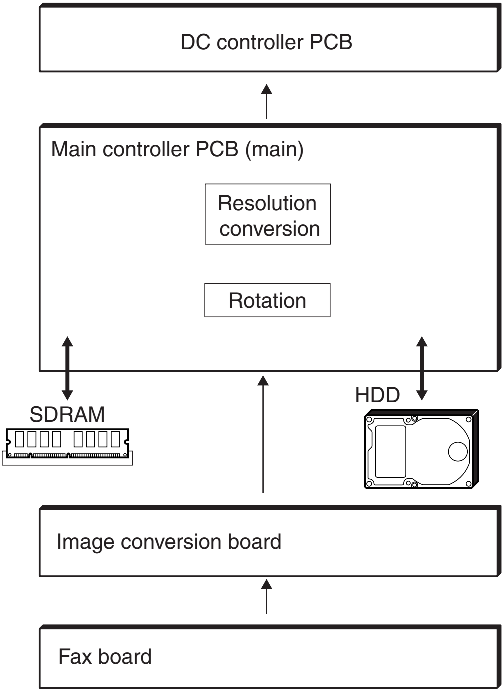
The following shows the flow of image data when fax transmission functions are used:


Reader unit
RGB
24
Main controller PCB (sub)
RGB
image area signal
Main controller PCB (main)
JPEG compression
Resolution conversion
JPEG decompression
Rotation
MMR compression
Binary processing
SDRAM
HDD
Image conversion board
Fax board

F-4-20

4.6.5 Image Data Flow for Fax Reception Functions

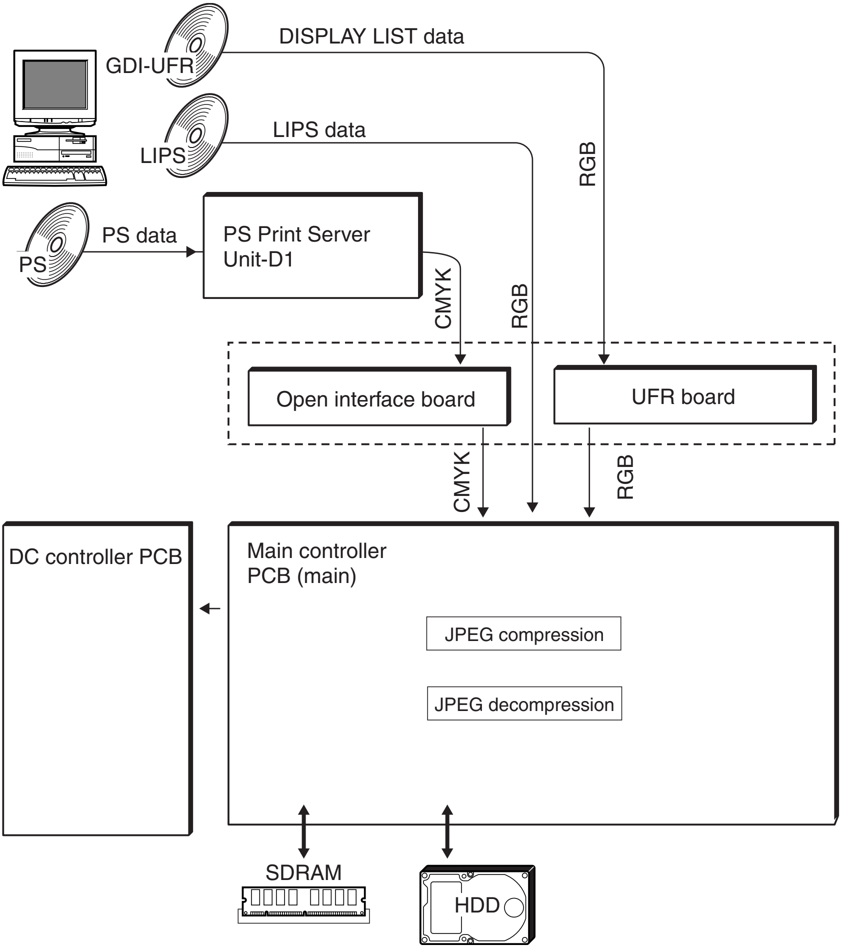
The following is the flow of image data used for fax reception functions.


DC controller PCB
Main controller PCB (main)
Resolution conversion
Rotation
SDRAM
HDD
Image conversion board
Fax board

F-4-21

4.6.6 Flow of Image Data (PDL function)

The following shows the flow of image data when PDL functions are used:


GDI-UFR
DISPLAY LIST data
LIPS
LIPS data
RGB
PS
PS data
PS Print Server Unit-D1
CMYK
RGB
Open interface board
UFR board
CMYK
RGB
DC controller PCB
Main controller PCB (main)
JPEG compression
JPEG decompression
SDRAM
HDD

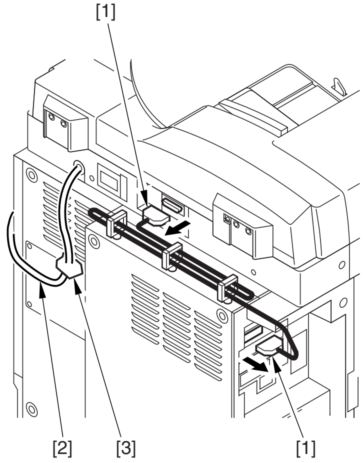
F-4-22

4.7 Parts Replacement Procedure

4.7.1 Controller Box

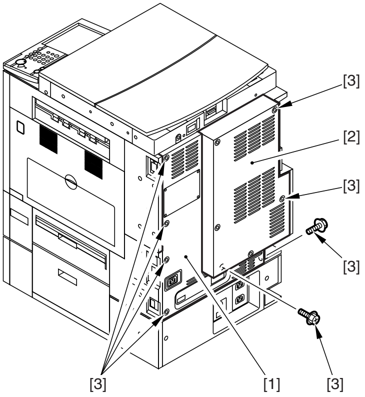
4.7.1.1 Removing the Rear Cover (right)

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-4-23

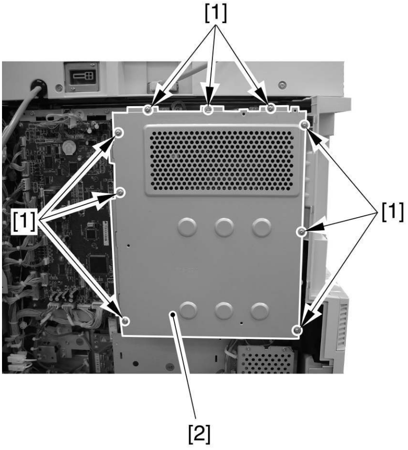
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-4-24

4.7.1.2 Removing the Controller Box Cover

1) Remove the 9 screws [1], and detach the controller box cover [2].

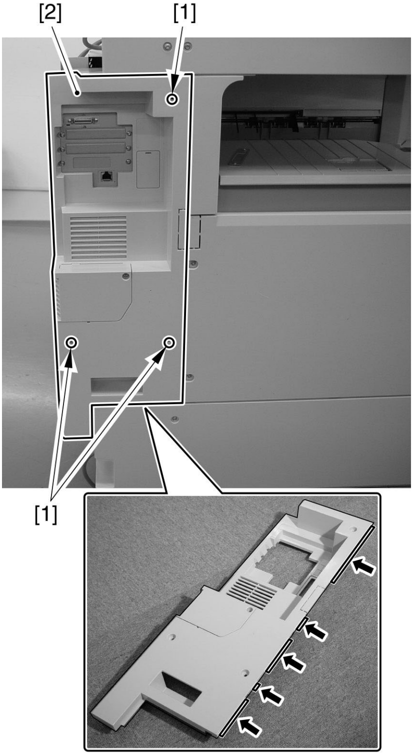


F-4-25

4.7.1.3 Removing the Left Cover (rear)

1) Remove the 3 screws [1], and detach the rear left cover [2].

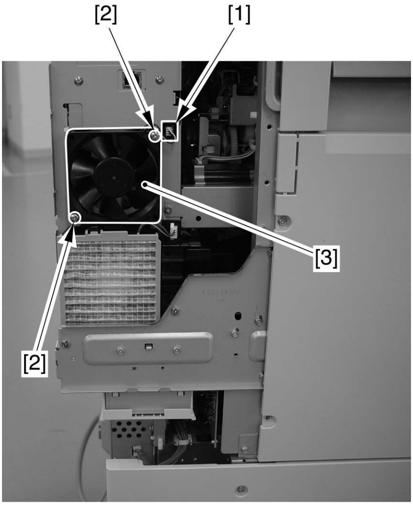
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-4-26

4.7.1.4 Removing the Controller Fan

1) Disconnect the connector [1] of the host machine, and remove the 2 screws [2]; then, detach the controller fan [3].

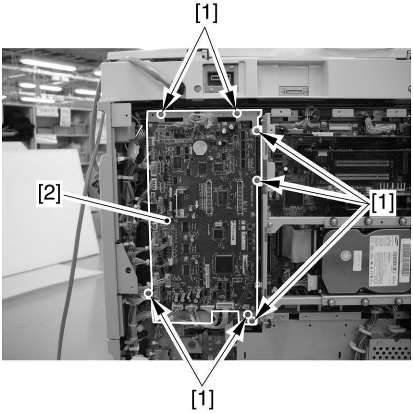


F-4-27

4.7.1.5 Removing the Controller Box

1) Remove the 7 screws [1].

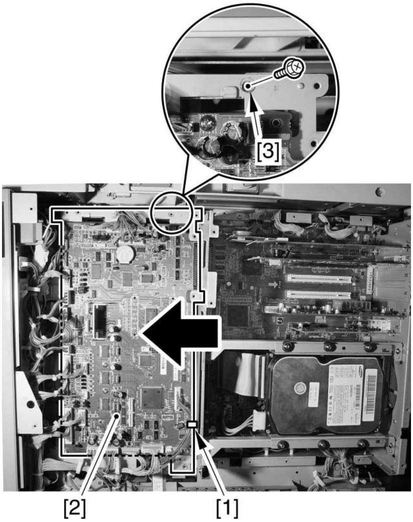
⚠Free the DC controller PCB base [2]. (You need not detach it.)



F-4-28

2) Free the wire saddle [1], and slide the DC controller PCB base [2] in the direction of the arrow.

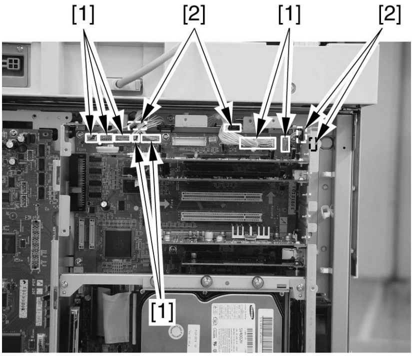
Fit the removed screw in the hole [3]; then, temporarily fix the DC controller PCB base [2] in place.



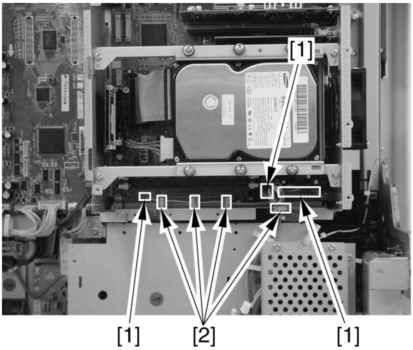
F-4-29

3) Disconnect the 10 connectors [1] of the main controller PCB; then, remove the 8 wire saddles.

⚠If a fax unit is installed, you will have to disconnect 12 connectors in the case of a Japanese model or 11 connectors in the case of a non-Japanese model.

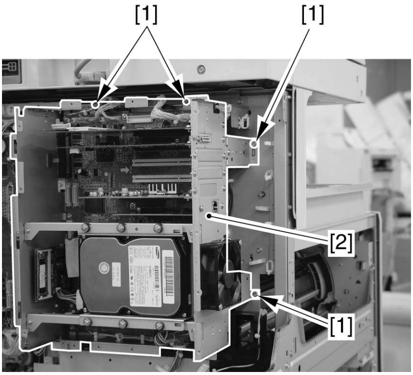


F-4-30

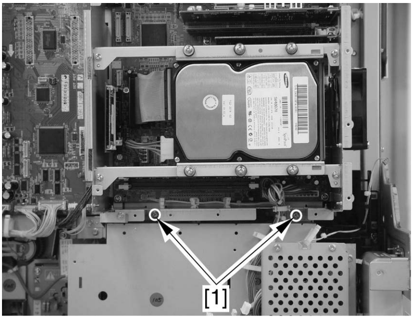


F-4-31

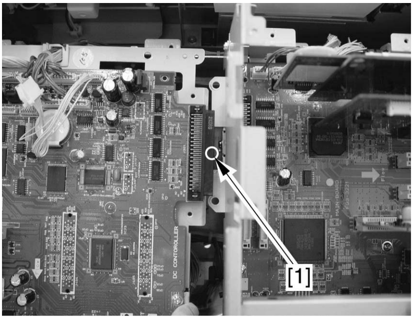
4) Remove the 7 screws, and detach the controller box [2].



F-4-32

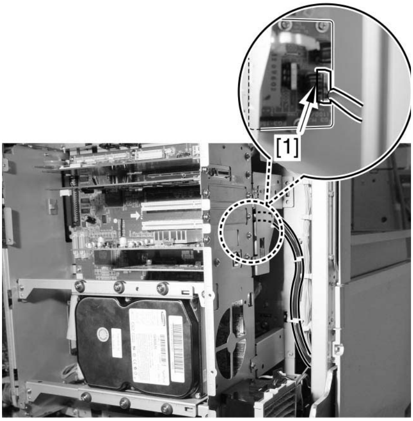


F-4-33



F-4-34

⚠If a fax unit is installed, you will find a connector [1] on the modular PCB found behind the controller box. Be sure to disconnect this connector before detaching the controller box from the machine.

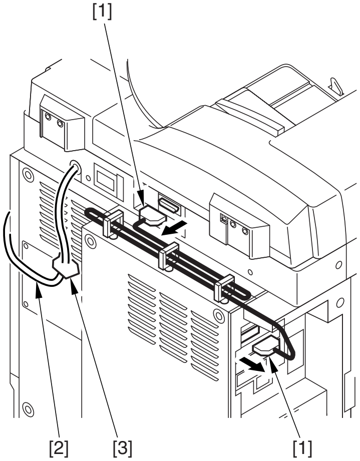


F-4-35

4.7.2 Main Controller PCB (main)

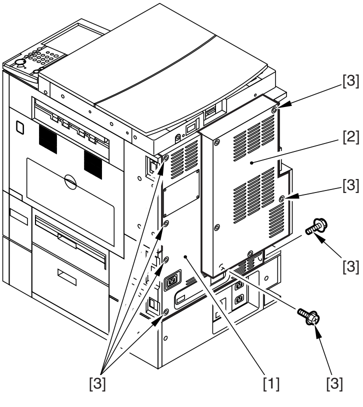
4.7.2.1 Removing the Rear Cover

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-4-36

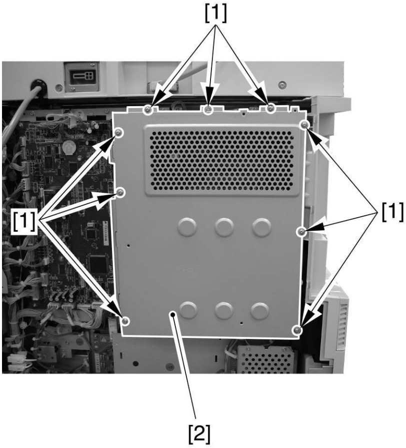
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-4-37

4.7.2.2 Removing the Controller Box Cover

1) Remove the 9 screws [1], and detach the controller box cover [2].

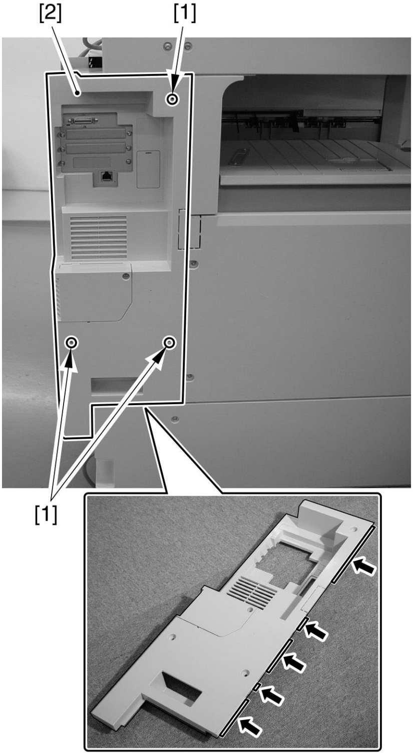


F-4-38

4.7.2.3 Removing the Left Cover (rear)

1) Remove the 3 screws [1], and detach the rear left cover [2].

⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.

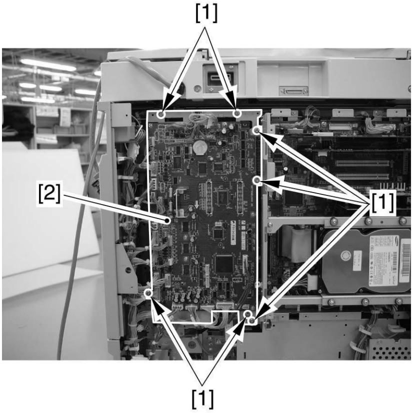


F-4-39

4.7.2.4 Removing the Main Controller PCB (main)

1) Remove the 7 screws.

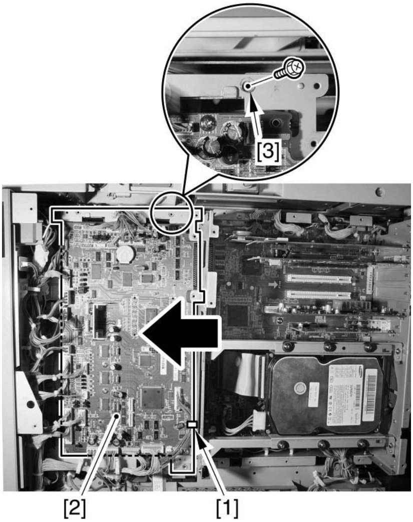
⚠Free the DC controller PCB base [2]. (You need not detach it.)



F-4-40

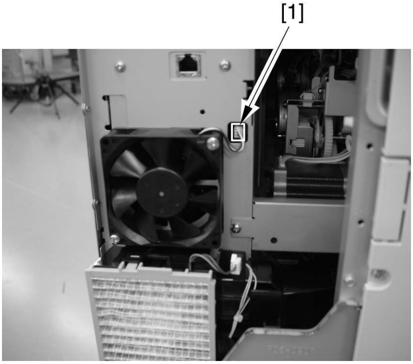
2) Free the wire saddle [1], and slide the DC controller PCB base [2] in the direction of the arrow.

Fit the removed screw in the hole [3], and temporarily fix the DC controller PCB base in place.



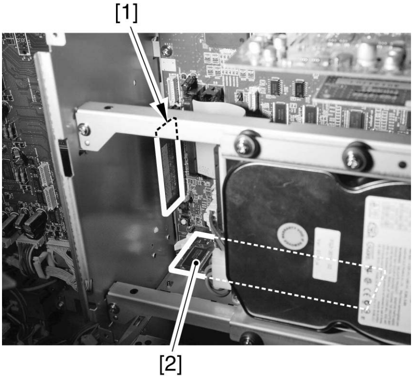
F-4-41

3) Disconnect the connector [1] of the controller fan.



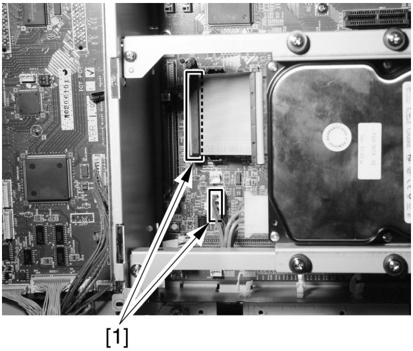
F-4-42

4) Remove the boot ROM [1] and the image memory (SDRAM) [2].



F-4-43

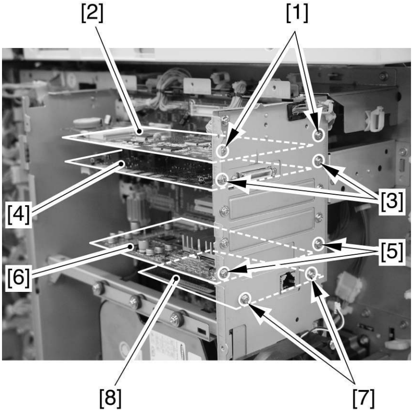
5) Disconnect the 2 connectors [1].



F-4-44

6) Remove the screws [1] [3] [5] [7], 3 pc. each; then, detach the following:

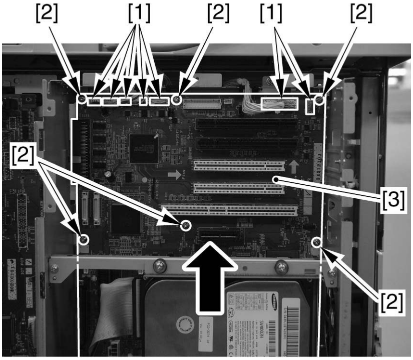
- expansion bus PCB [2]
- main controller PCB (sub) [4]
- UFR board [6]
- Ethernet board [8]



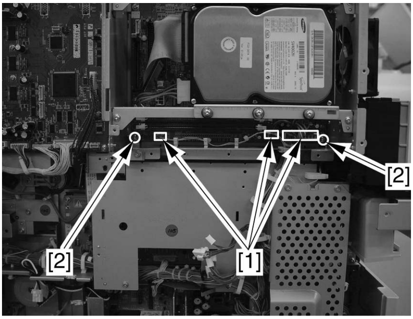
F-4-45

7) Disconnect the 10 connectors [1], and remove the 8 screws [2]; then, slide the main controller PCB (main) [3] in the direction of the arrow to detach.

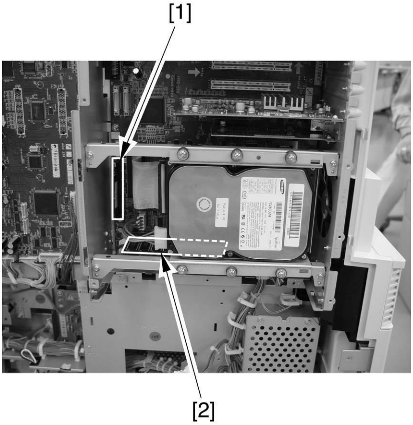
⚠If a fax unit is installed, you will have to disconnect 12 connectors [1] in the case of a Japanese model or 11 connectors in the case of a non-Japanese model.



F-4-46



F-4-47

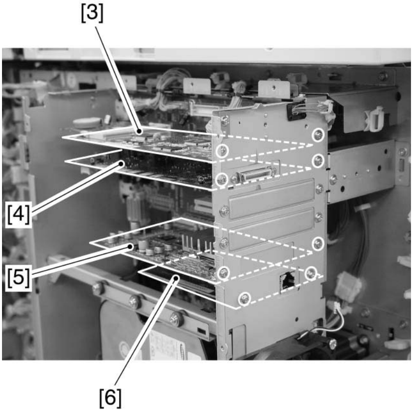


F-4-48

4.7.2.5 After Replacing the Main Controller PCB (main)

When you have mounted the main controller PCB (main), be sure to mount the PCBs you may have removed before starting the work:

[1] Boot ROM
[2] Image memory (SDRAM)
[3] Expansion bus PCB
[4] Main controller PCB (sub)
[5] UFR board
[6] Ethernet board

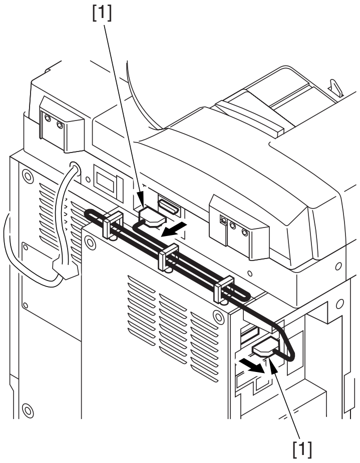


F-4-49

4.7.3 Main Controller PCB (sub)

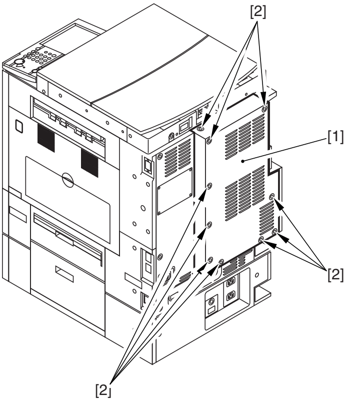
4.7.3.1 Removing the Rear Cover (right)

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-4-50

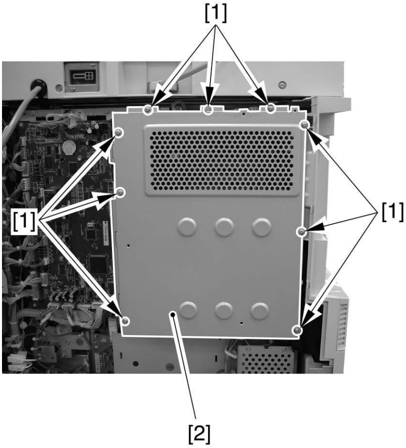
2) Remove the rear cover (right) [1]. (9 screws [3])



F-4-51

4.7.3.2 Removing the Controller Box Cover

1) Remove the 9 screws [1], and detach the controller box cover [2].

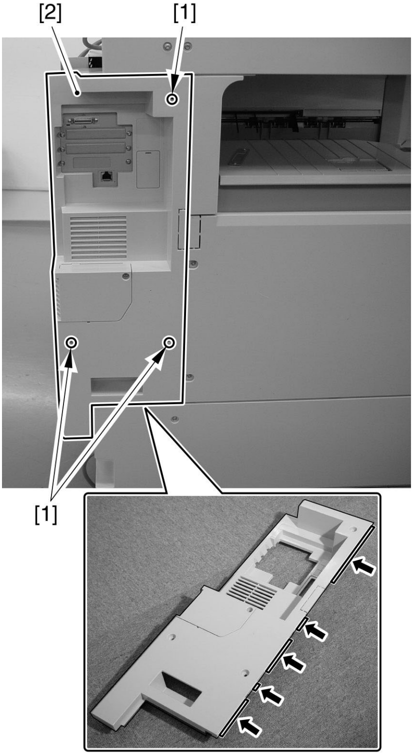


F-4-52

4.7.3.3 Removing the Left Cover (rear)

1) Remove the 3 screws [1], and detach the rear left cover [2].

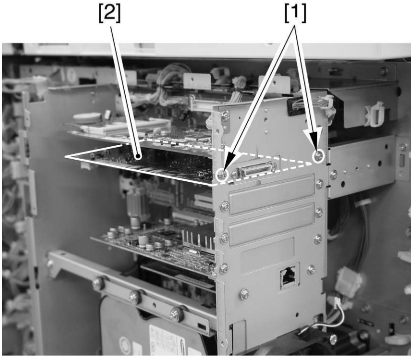
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-4-53

4.7.3.4 Removing the Main Controller PCB (sub)

1) Remove the 2 screws [1], and detach the main controller PCB (sub) [2].

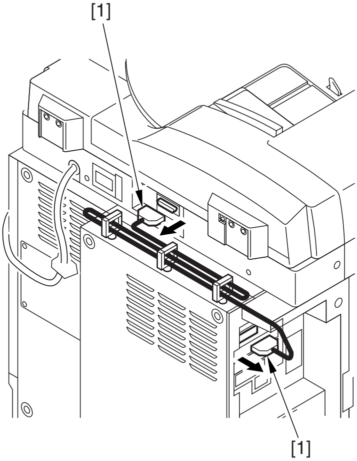


F-4-54

4.7.4 Expansion Bus PCB

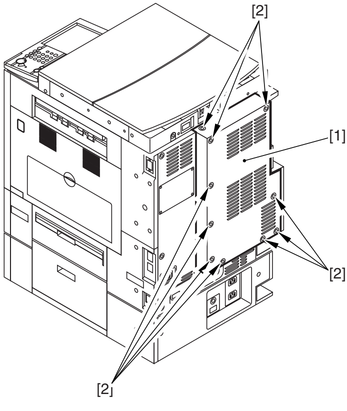
4.7.4.1 Removing the Rear Cover (right)

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-4-55

2) Remove the rear cover (right) [1]. (9 screws [3])

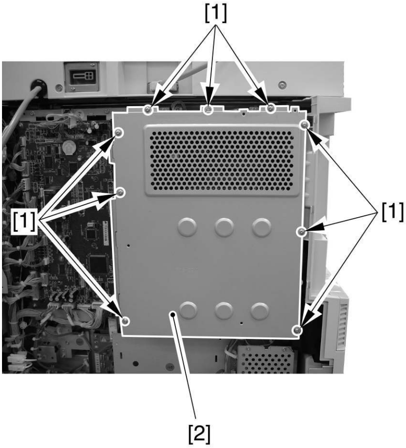


F-4-56

4.7.4.2 Removing the Controller Box Cover

iR C3100

1) Remove the 9 screws [1], and detach the controller box cover [2].



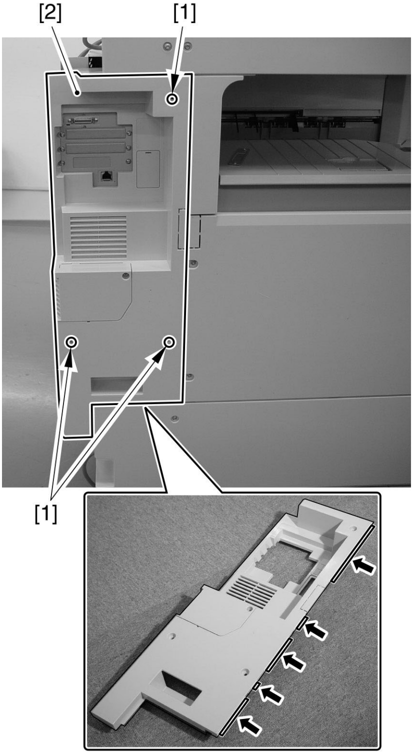
F-4-57

4.7.4.3 Removing the Left Cover (rear)

iR C3100

1) Remove the 3 screws [1], and detach the rear left cover [2].

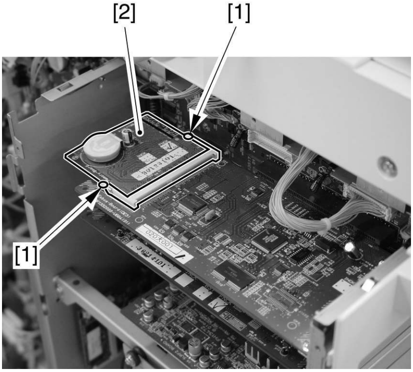
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-4-58

4.7.4.4 Removing the SRAM Board

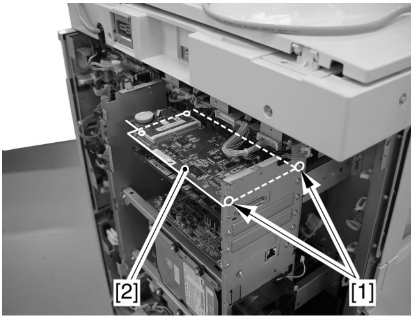
1) Free the 2 locks [1], and detach the SRAM board [2].



F-4-59

4.7.4.5 Removing the Expansion Bus PCB

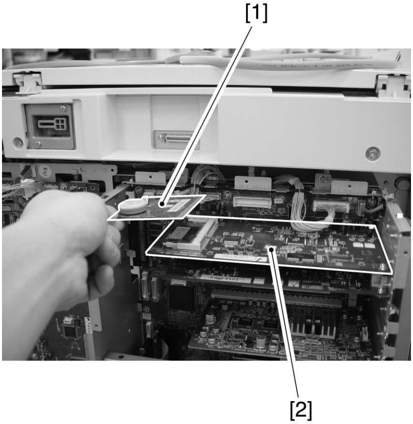
1) Remove the 2 screws [1], and detach the expansion bus PCB [2].



F-4-60

4.7.4.6 After Replacing the Expansion Bus PCB

Mount the SRAM PCB [1] removed for the old extension bus PCB to the extension bus PCB [2] you have newly mounted.

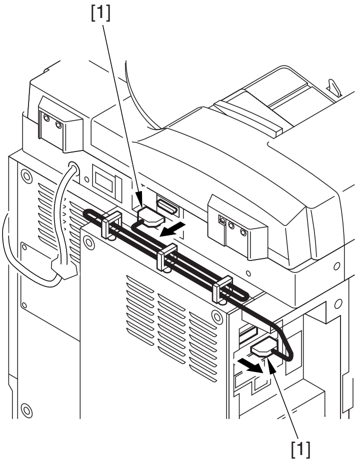


F-4-61

4.7.5 SRAM PCB

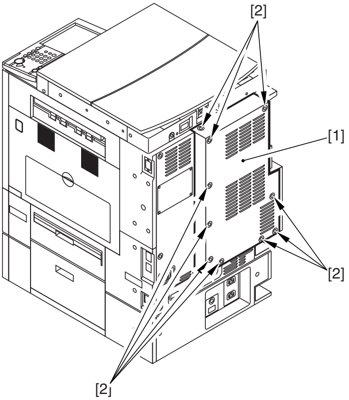
4.7.5.1 Removing the Rear Cover (right)

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-4-62

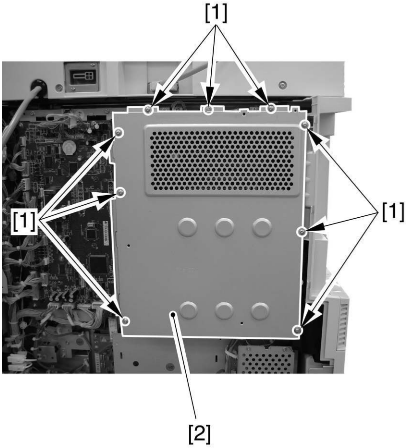
2) Remove the rear cover (right) [1]. (9 screws [3])



F-4-63

4.7.5.2 Removing the Controller Box Cover

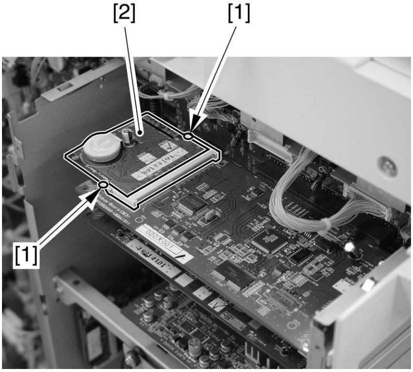
1) Remove the 9 screws [1], and detach the controller box cover [2].



F-4-64

4.7.5.3 Removing the SRAM Board

1) Free the 2 locks [1], and detach the SRAM board [2].



F-4-65

4.7.5.4 After Replacing the SRAM Board

iR C3100

⚠

- Inform the user that replacing the SRAM board will cause all image data in Box to be lost. Be sure to obtain the user's consent before starting the work.
- **Be sure that the SRAM board you are using is a new one.**
  The machine will be likely to malfunction if you use a RAM that has been used in a different printer unit.

1) Replace the SRAM board, and turn on the main power. (The machine will execute automatic initialization.)
2) See that the machine indicates the message "Turn On the Power Switch on the Right Side" on its control panel.

Turn off and then on the power.

3) Initialize the RAM.

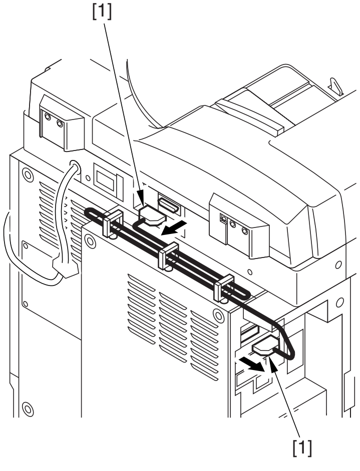
COPIER>FUNCTION>CLEAR>MN-CON

Make the foregoing selections, and press the OK key.

4.7.6 UFR Board

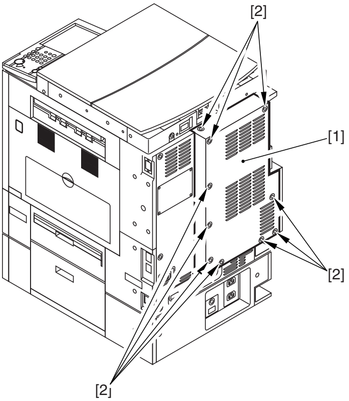
4.7.6.1 Removing the Rear Cover (right)

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-4-66

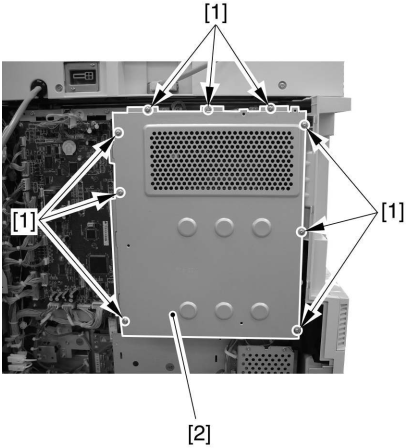
2) Remove the rear cover (right) [1]. (9 screws [3])



F-4-67

4.7.6.2 Removing the Controller Box Cover

1) Remove the 9 screws [1], and detach the controller box cover [2].

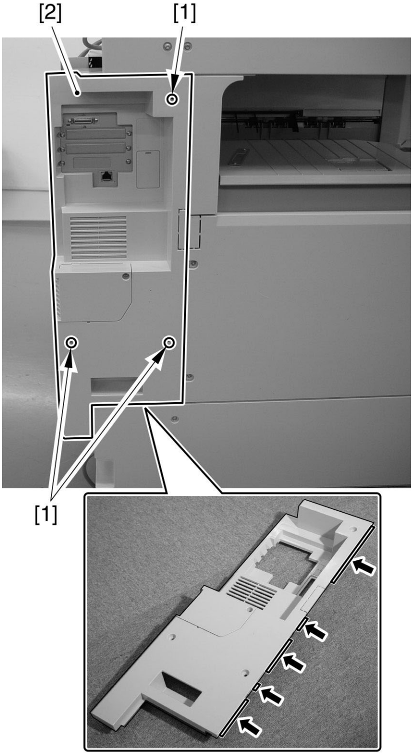


F-4-68

4.7.6.3 Removing the Left Cover (rear)

1) Remove the 3 screws [1], and detach the rear left cover [2].

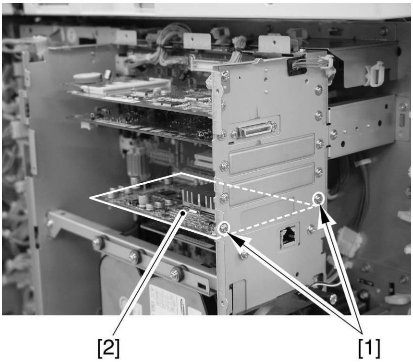
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-4-69

4.7.6.4 Removing the UFR Board

1) Remove the 2 screws [1], and detach the UFR board [2].

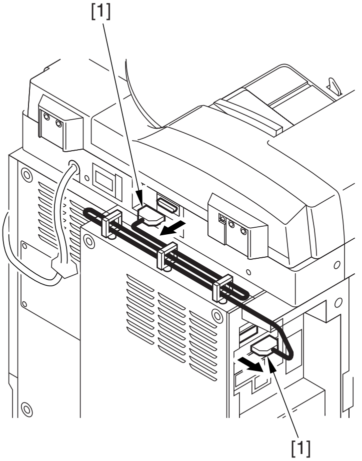


F-4-70

4.7.7 Ethernet Board

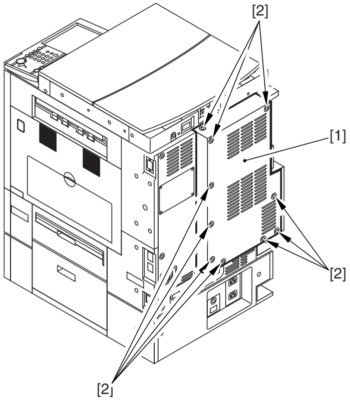
4.7.7.1 Removing the Rear Cover (right)

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-4-71

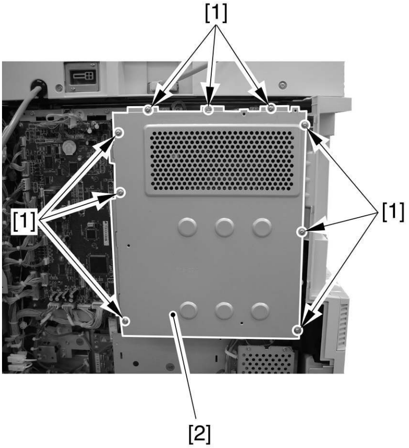
2) Remove the rear cover (right) [1]. (9 screws [3])



F-4-72

4.7.7.2 Removing the Controller Box Cover

1) Remove the 9 screws [1], and detach the controller box cover [2].

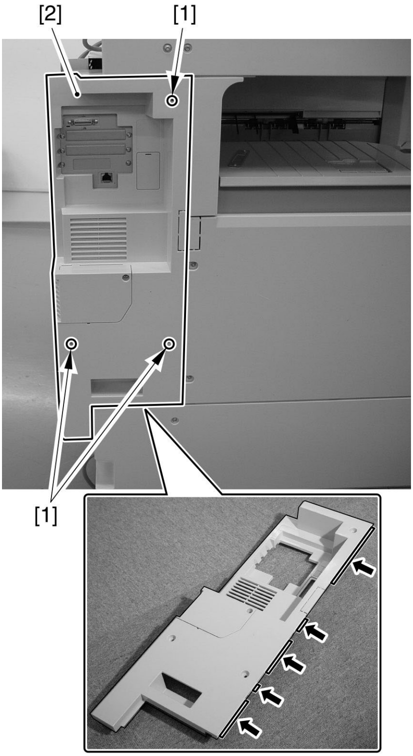


F-4-73

4.7.7.3 Removing the Left Cover (rear)

1) Remove the 3 screws [1], and detach the rear left cover [2].

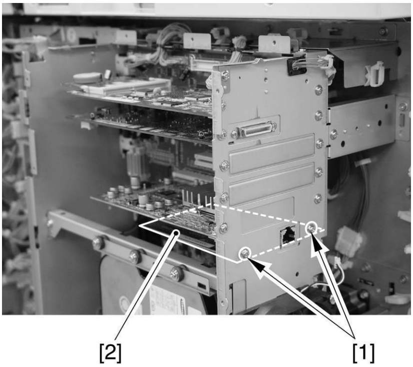
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-4-74

4.7.7.4 Removing the Ethernet Board

1) Remove the 2 screws [1], and detach the Ethernet board [2].



F-4-75

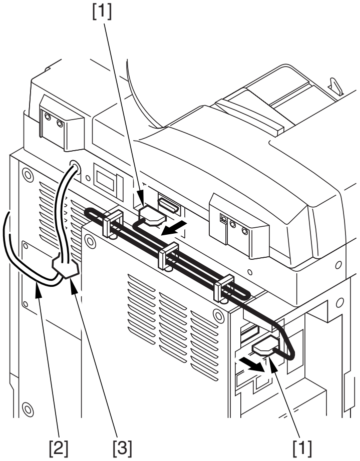
4.7.8 HDD

4.7.8.1 Handling the HDD

⚠When removing the HDD, be sure to protect against static destruction. Keep the HDD free of impact.

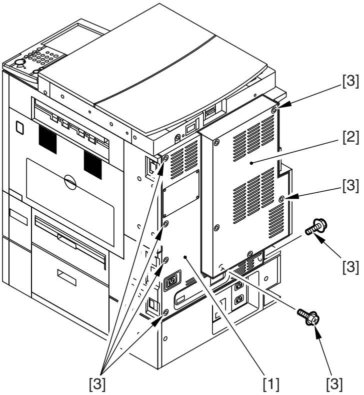
4.7.8.2 Removing the Rear Cover

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-4-76

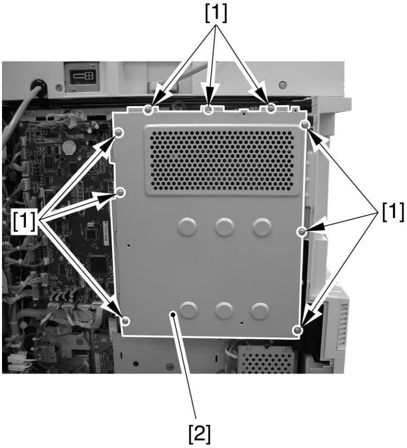
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-4-77

4.7.8.3 Removing the Controller Box Cover

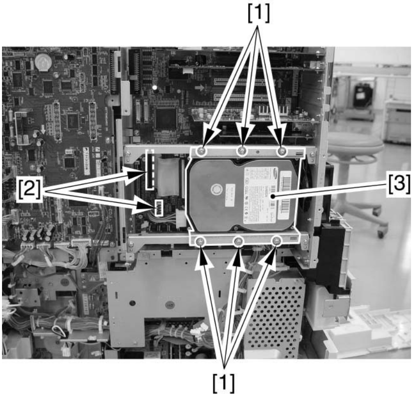
1) Remove the 9 screws [1], and detach the controller box cover [2].



F-4-78

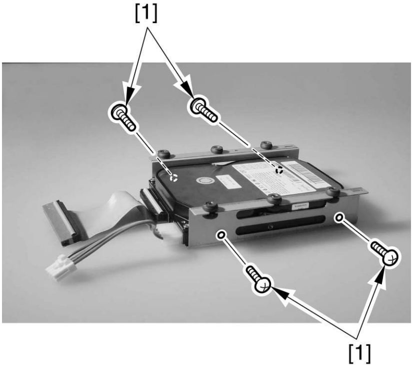
4.7.8.4 Removing the HDD

1) Remove the 6 screws [1], and disconnect the 2 connectors [2]; then, detach the HDD unit [3].



F-4-79

2) Remove the 4 screws [1], and detach the HDD from the HDD unit.



F-4-80

4.7.8.5 After Replacing the HDD

A. If NetSpot Accountant (NSA) Is Not Used

1) Format the HDD.

Start up the machine in safe mode (i.e., turn on the main power while holding down the 2 and 8 keys).

Using the SST's HD formatting function, execute formatting of all partitions. (For details, see the instructions on how to upgrade the machine.)

2) Download the system software.

Using the SST, download the system, language, and RUI files.

It may take about 5 min for the machine to start up after a download session.

B. If a Card Reader and NetSpot Accountant (NSA) Are Used

A card ID used by the NSA exists on the HDD. If you have replaced the HDD, you must also download the card data used by the NSA once again; otherwise, you will not be able to make use of statistical management functions of the NSA.

You will first have to format the HDD and download the system software as for A above; thereafter, you need to perform additional steps:

1) Format the HDD.

2) Download the system software.

3) Make the following selections:

COPIER>FUNCTION>INSTALL>CA

RD

4) Enter a card number.

Enter the number of the first card of those to be used for group control, and press the OK key. (For instance, if the group will be using numbers between 1 through 1000, enter '1'.)

5) Turn off and then on the machine's main power.

6) Make a check.

Make the following selections in Additional Function: system control settings>group ID control>count control; then, check to make sure the following IDs are made ready: ID00000001 through ID00001000.

7) Set the appropriate addresses.

Make the following selections in Additional Function: system control settings>network settings>TCP/IP settings>IP address. Then, set the following addresses: IP address, gateway address, subnet mask.

8) Enter a number.

Make the following selections in Additional Function, and enter a number: system administrator information settings>system control group ID/system control ID No.

9) Turn off and then on the machine's main power.

⚠Unless you set up the system control ID and the system control ID No., you will not be able to register a card to the machine while using NSA.

10) Download the card ID.

Keep the machine in a standby state, and download the card ID through the NSA.

11) Check the count control.

Make the following selections in Additional Function to bring up the Count Control screen: system control settings>group ID control; then, check to see that only the ID data you have downloaded are indicated.

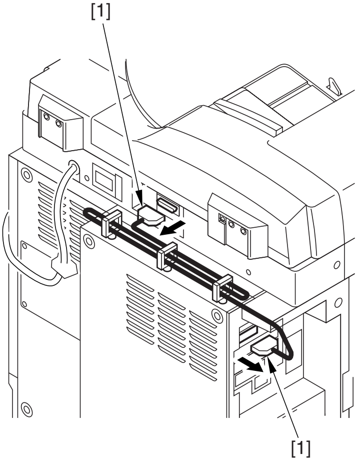
12) Check to see that the operation is normal.

Using a user card that has been registered to the NSA, make copies; then, check that the number of copies you have made are associated with the card you have used in the machine.

4.7.9 Controller Fan

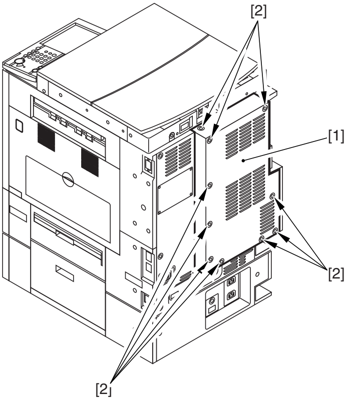
4.7.9.1 Removing the Rear Cover (right)

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-4-81

2) Remove the rear cover (right) [1]. (9 screws [3])

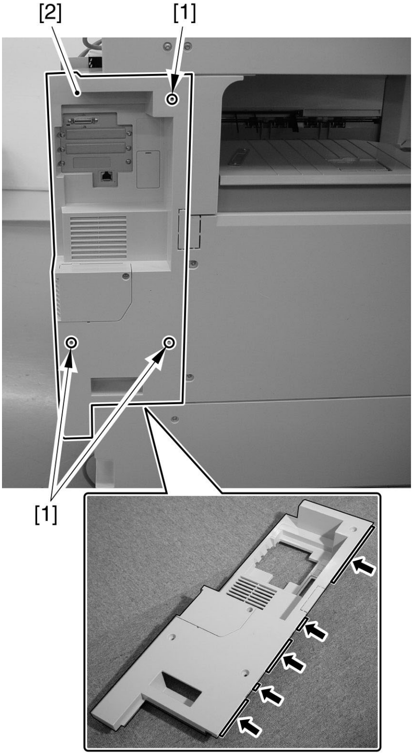


F-4-82

4.7.9.2 Removing the Left Cover (rear)

1) Remove the 3 screws [1], and detach the rear left cover [2].

⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.

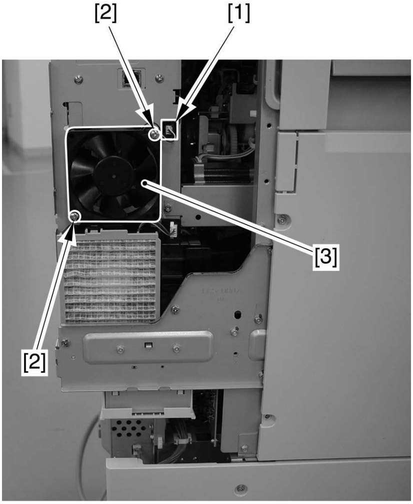


F-4-83

4.7.9.3 Removing the Controller Fan

1) Disconnect the connector [1] of the host

machine, and remove the 2 screws [2]; then, detach the controller fan [3].



F-4-84

Chapter 5 Original Exposure System

Contents

5.1 Construction 5-1
  5.1.1 Specifications, Control Mechanisms, and Functions 5-1
  5.1.2 Major Components 5-2
  5.1.3 Construction of the Control System 5-4
  5.1.4 Reader Controller PCB 5-5
5.2 Basic Sequence 5-7
  5.2.1 Basic Sequence of Operations at Power-On 5-7
  5.2.2 Basic Sequence of Operations in Response to a Press on the Start Key (book mode, 1 original) 5-8
  5.2.3 Basic Sequence of Operations in Response to a Press on the Start Key (ADF mode, 1 original) 5-10
5.3 Various Control 5-11
  5.3.1 Controlling the Scanner Drive System 5-11
    5.3.1.1 Overview 5-11
    5.3.1.2 Reader Motor Control 5-12
  5.3.2 Contact Sensor 5-14
    5.3.2.1 Overview 5-14
    5.3.2.2 Analog Control Inside the Contact Image Sensor (CIS) 5-15
  5.3.3 Enlargement/Reduction 5-17
    5.3.3.1 Changing the Magnification in Main Scanning Direction 5-17
    5.3.3.2 Changing the Magnification in Sub Scanning Direction 5-17
  5.3.4 Controlling the Scanning Lamp 5-17
    5.3.4.1 Scanning Lamp 5-17
    5.3.4.2 Overview 5-18
    5.3.4.3 Activation Control 5-18
    5.3.4.4 Error Detection 5-19
  5.3.5 Detecting the Size of Originals 5-19
    5.3.5.1 Overview 5-19
    5.3.5.2 Points of Original Size Detection 5-20
    5.3.5.3 Overview of Detection Operation 5-22
  5.3.6 Dirt Sensor Control 5-25
    5.3.6.1 Overview 5-25

5.3.7 Image Processing 5-29
5.3.7.1 Overview 5-29
5.3.7.2 Driving the CCD 5-30
5.3.7.3 Gain Correction and Offset Correction for the CCD Output..... 5-31
5.3.7.4 A/D Conversion of the CCD Output 5-32
5.3.7.5 Shading Correction (outline) 5-32
5.3.7.6 Shading Correction 5-32
5.3.7.7 Shading Adjustment 5-33
5.4 Parts Replacement Procedure 5-34
5.4.1 Copyboard Glass 5-34
5.4.1.1 Removing the Copyboard Glass 5-34
5.4.1.2 After Replacing the Copyboard Glass 5-35
5.4.1.3 Removing the ADF Reading Glass 5-35
5.4.1.4 After Replacing the ADF Reading Glass 5-36
5.4.2 Reader Controller PCB 5-36
5.4.2.1 Before Replacing the Reader Controller PCB 5-36
5.4.2.2 Removing the Reader Rear Cover 5-36
5.4.2.3 Removing the Copyboard Glass 5-37
5.4.2.4 Removing the Reader Controller PCB 5-38
5.4.2.5 After Replacing the Reader Controller PCB or After Initializing the RAM 5-41
5.4.3 Inverter PCB 5-43
5.4.3.1 Removing the Reader Rear Cover 5-43
5.4.3.2 Removing the Copyboard Glass 5-44
5.4.3.3 Removing the Inverter PCB 5-45
5.4.4 Scanner Motor 5-46
5.4.4.1 Removing the Reader Rear Cover 5-46
5.4.4.2 Removing the Scanner Motor 5-46
5.4.5 Contact Sensor 5-47
5.4.5.1 Removing the Reader Front Cover 5-47
5.4.5.2 Removing the Reader Rear Cover 5-48
5.4.5.3 Removing the Copyboard Glass 5-48
5.4.5.4 Removing the Contact Image Sensor (CIS) 5-50
5.4.5.5 After Replacing the CIS 5-51
5.4.6 Original Cover Sensor 5-52
5.4.6.1 Removing the Reader Rear Cover 5-52

5.4.6.2 Removing the Copyboard Cover Open/Closed Sensor (front/rear)5-53
5.4.7 Contact Sensor HP Sensor 5-54
5.4.7.1 Removing the Copyboard Glass....5-54
5.4.7.2 Removing the ADF Reading Glass....5-54
5.4.7.3 Removing the Contract Sensor Home Position Sensor....5-55
5.4.8 Original Sensor....5-56
5.4.8.1 Removing the Reader Rear Cover....5-56
5.4.8.2 Removing the Copyboard Glass....5-56
5.4.8.3 Removing the Original Size Sensor (AB/Inch-configuration)...5-57
5.4.9 Reader Heater (option)....5-59
5.4.9.1 Removing the Copyboard Glass....5-59
5.4.9.2 Removing the Reader Heater (right)....5-59
5.4.9.3 Removing the ADF Reading Glass....5-60
5.4.9.4 Removing the Reader Heater (left)....5-60

5.1 Construction

5.1.1 Specifications, Control Mechanisms, and Functions

The following are the major specifications, control mechanisms, and functions associated with the original exposure system:

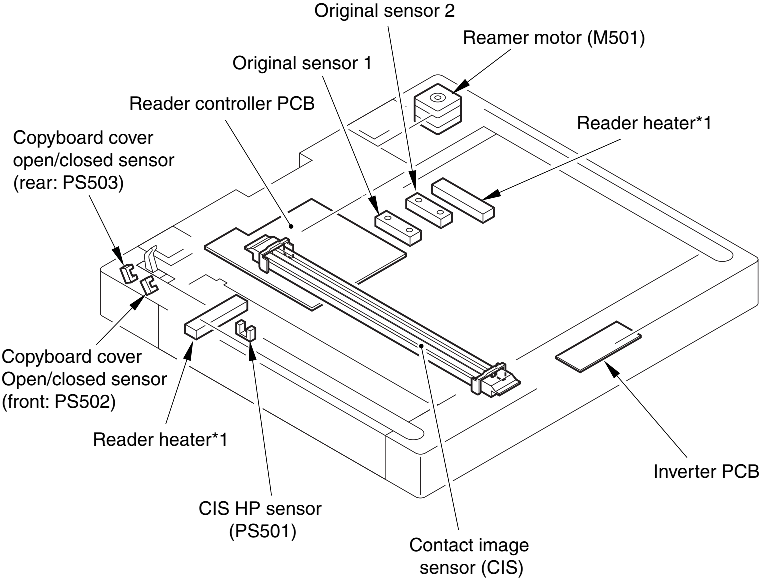
T-5-1

Item	**Description**
Source of light	Xenon lamp (white)
Scan	in book mode: scan by a moving contact image sensor (CIS)
	in ADF mode: scan by a stationary contact image sensor (CIS; stream reading)
Reading resolution	600 dpi (main scanning direction) x 600 dpi (sub scanning direction)
Number of gradations	256
Productivity (w/ ADF in use)	28 ipm (single-sided, A4/LTR)
Carriage position detection	by contact image sensor (CIS) HP sensor (PS501)
Magnification	25% to 400%
	in main scanning direction: image processing by the main control PCB (main)
	in sub scanning direction: image processing by the main controller PCB (main)
Lens	rod lens array
CCD	number of lines: 3 (RGB)
	Number of pixels: 7488

Item	Description	
	maximum reading width: 310 mm	
CIS drive control	by reader motor (M501)	
Scanning lamp activation control	[1] by inverter circuit	
	[2] error detection	
Original size identification	[1] Book Mode	
	main scanning direction:	by contact image sensor (CIS)
	sub scanning mode:	by reflection sensor (AB/Inch)
	[2] ADF mode	
	main scanning direction:	by slide guide in ADF
	sub scanning direction:	by photo sensor in ADF

5.1.2 Major Components

The original exposure system consists of the following major components:


Original sensor 2
Reamer motor (M501)
Original sensor 1
Reader controller PCB
Reader heater*1
Copyboard cover
open/closed sensor
(rear: PS503)
Copyboard cover
Open/closed sensor
(front: PS502)
Reader heater*1
Inverter PCB
CIS HP sensor
(PS501)
Contact image
sensor (CIS)

*1: accessories settings (100/230V model only)

F-5-1

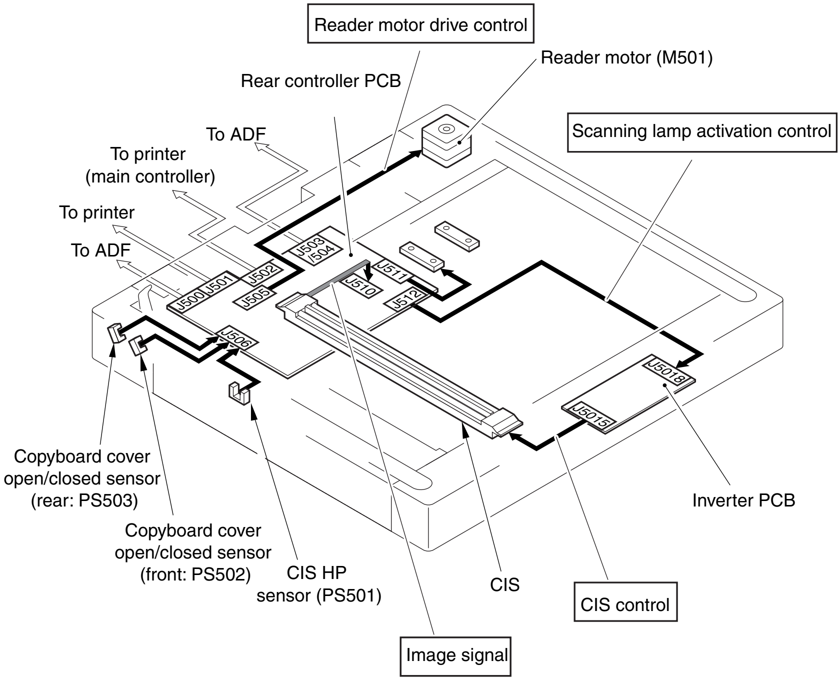
T-5-2

Item	Notation	Description
Contact image sensor (CIS)		xenon lamp (2 pc. of 2400 lx)
Reader motor	M501	pulse motor (carriage drive control)
CIS HP sensor	PS501	photointerrupter (CIS home position detection)
Copyboard cover open/ closed sensor	PS502/PS503	photointerrupter (copyboard cover state (open/closed) detection)
	(PS502)	sub scanning direction by angle of copyboard cover (lamp ON)
		copyboard cove/ADF: 25 deg (approx.)

Item	Notation	Description
	(PS503)	main scanning direction by angle of copyboard cover (about 17 deg)
Original sensor 1	---	original size detection (AB)
Original sensor 2	---	original size detection (Inch)

5.1.3 Construction of the Control System

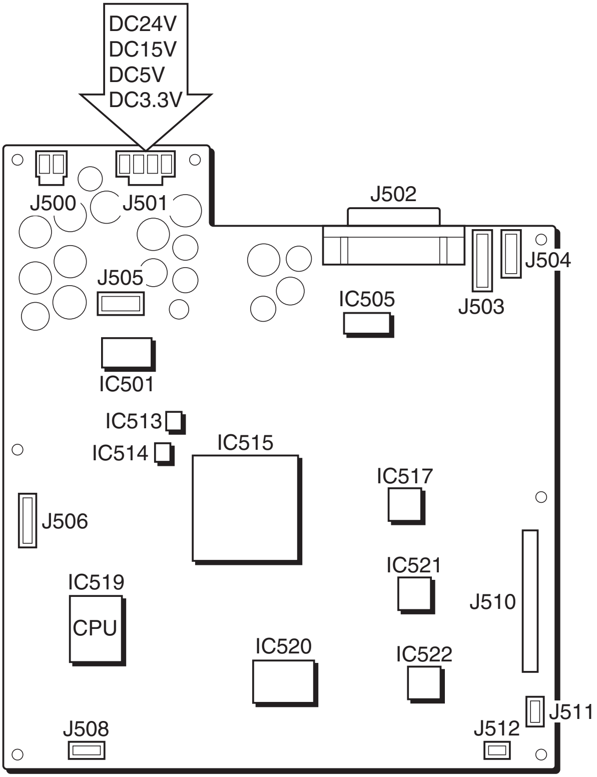
The control system of the original is constructed as follows:


Reader motor drive control
Reader motor (M501)
Rear controller PCB
Scanning lamp activation control
To ADF
To printer
(main controller)
To printer
To ADF
J503/504
J502
J501
J500
J505
J510
J511
J512
J506
J5018
J5015
Copyboard cover open/closed sensor (rear: PS503)
Copyboard cover open/closed sensor (front: PS502)
CIS HP sensor (PS501)
CIS
CIS control
Inverter PCB
Image signal

F-5-2

5.1.4 Reader Controller PCB

The following shows the functional construction of the reader controller PCB:


DC24V
DC15V
DC5V
DC3.3V
J500
J501
J502
J503
J504
J505
IC505
IC501
IC513
IC514
IC515
IC517
J506
IC521
IC519
CPU
J510
IC520
IC522
J511
J508
J512

F-5-3

T-5-3

Jack	Description
J500	used to supply power to the ADF.
J501	used for power from the machine (printer unit).

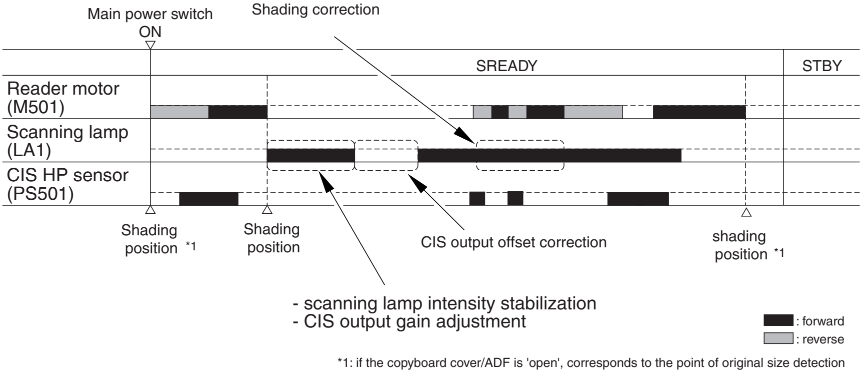
Jack	Description
J502	used for communication with the machine (printer unit).
J503	used for communication with the ADF.
J504	used for communication with the ADF.
J505	used for connection to the main motor.
J506	used for connection with the original cover open/closed sensor, CIS HP sensor.
J510	used for connection with the contact image sensor (CIS).
J511	used for connection with the original size sensor (AB/Inch).
J512	used for connection with the inverter PCB.

T-5-4

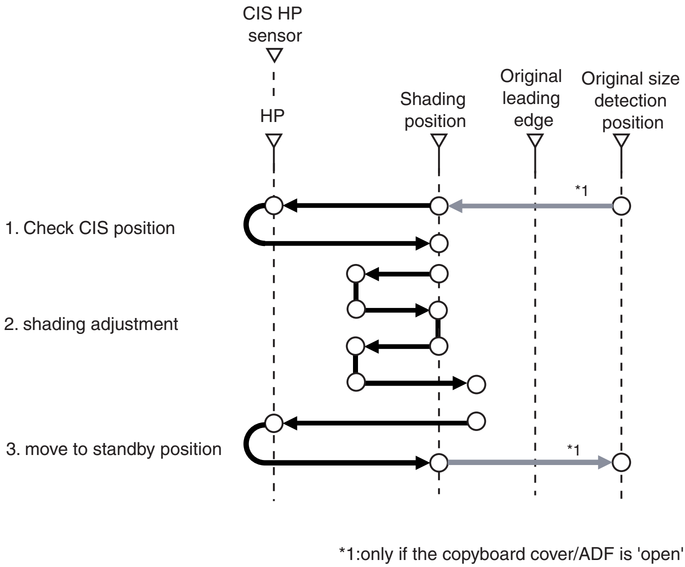
IC	Description
IC501	reader motor driver
IC505	image data parallel/serial conversion
IC513	EEPROM (backup of service mode settings)
IC514	EEPROM (backup of service mode settings)
IC515	image processing (shading correction)
IC517	A/D converter
IC519	CPU (boot program storage)
IC520	system software storage (flash ROM)
IC521	A/D converter
IC522	A/D converter

5.2 Basic Sequence

5.2.1 Basic Sequence of Operations at Power-On

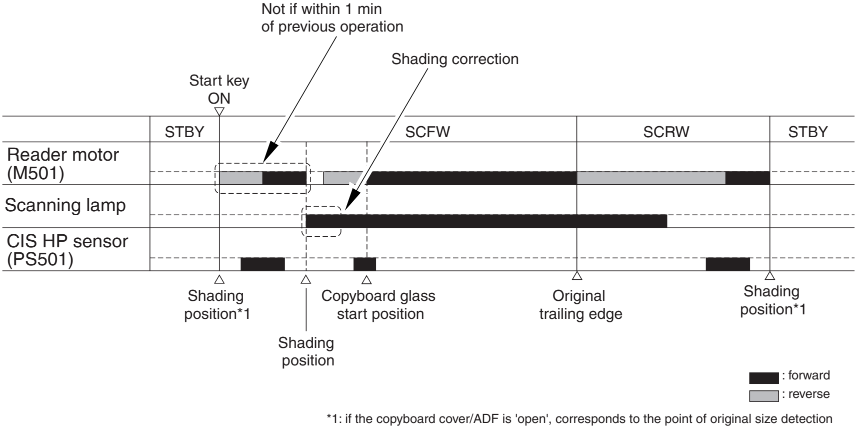

Main power switch ON
Shading correction
SREADY
STBY
Reader motor (M501)
Scanning lamp (LA1)
CIS HP sensor (PS501)
Shading position *1
Shading position
CIS output offset correction
shading position *1
- scanning lamp intensity stabilization
- CIS output gain adjustment
: forward
: reverse
*1: if the copyboard cover/ADF is 'open', corresponds to the point of original size detection

F-5-4

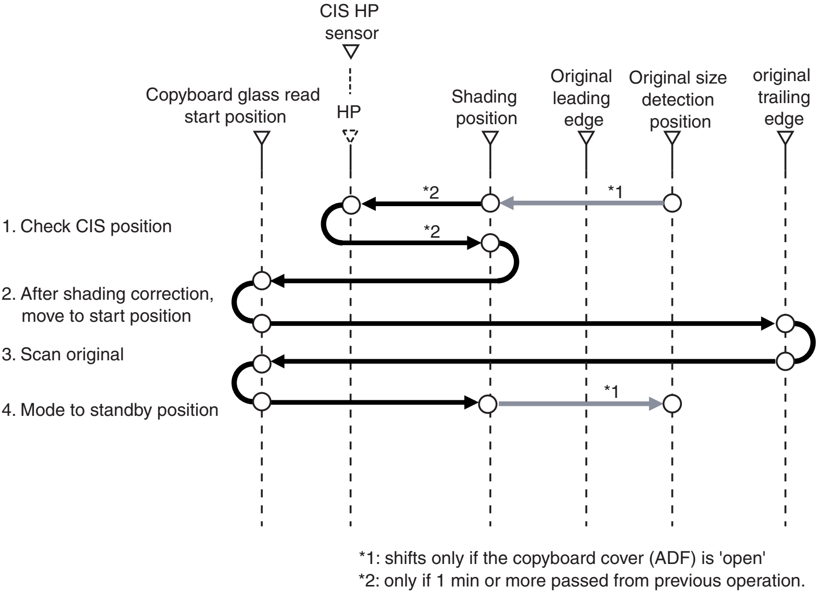

CIS HP sensor
HP
Shading position
Original leading edge
Original size detection position
*1
1. Check CIS position
2. shading adjustment
3. move to standby position
*1
*1:only if the copyboard cover/ADF is 'open'

F-5-5

5.2.2 Basic Sequence of Operations in Response to a Press on the Start Key (book mode, 1 original)


Not if within 1 min
of previous operation
Shading correction
Start key
ON
STBY
SCFW
SCRW
STBY
Reader motor
(M501)
Scanning lamp
CIS HP sensor
(PS501)
Shading
position*1
Shading
position
Copyboard glass
start position
Original
trailing edge
Shading
position*1
: forward
: reverse
*1: if the copyboard cover/ADF is 'open', corresponds to the point of original size detection

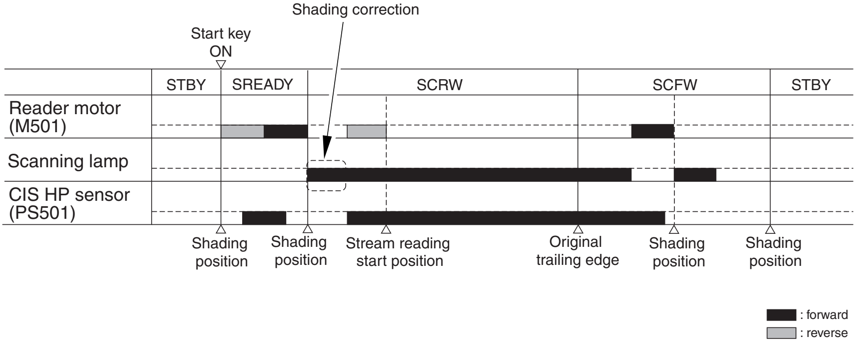
F-5-6


CIS HP
sensor
HP
Copyboard glass read
start position
Shading
position
Original
leading
edge
Original size
detection
position
original
trailing
edge
*2
*1
*2
*1
1. Check CIS position
2. After shading correction,
move to start position
3. Scan original
4. Mode to standby position
*1: shifts only if the copyboard cover (ADF) is 'open'
*2: only if 1 min or more passed from previous operation.

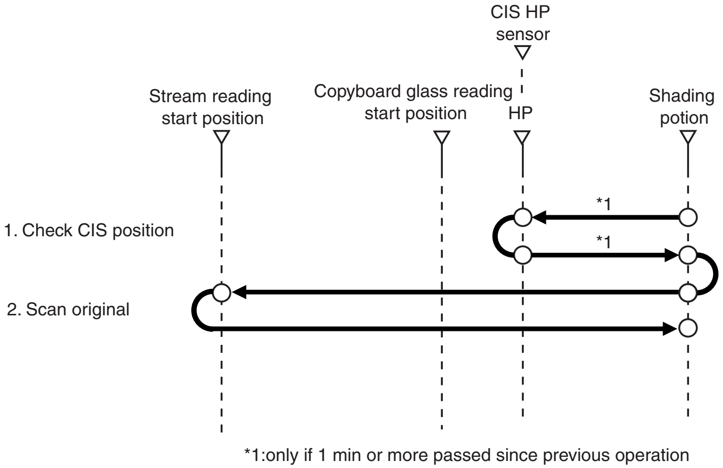
F-5-7

5.2.3 Basic Sequence of Operations in Response to a Press on the Start Key (ADF mode, 1 original)

iR C3100


Shading correction
Start key ON
STBY
SREADY
SCRW
SCFW
STBY
Reader motor (M501)
Scanning lamp
CIS HP sensor (PS501)
Shading position
Shading position
Stream reading start position
Original trailing edge
Shading position
Shading position
: forward
: reverse

F-5-8


CIS HP sensor
Stream reading start position
Copyboard glass reading start position
HP
Shading potion
*1
*1
1. Check CIS position
2. Scan original
*1:only if 1 min or more passed since previous operation

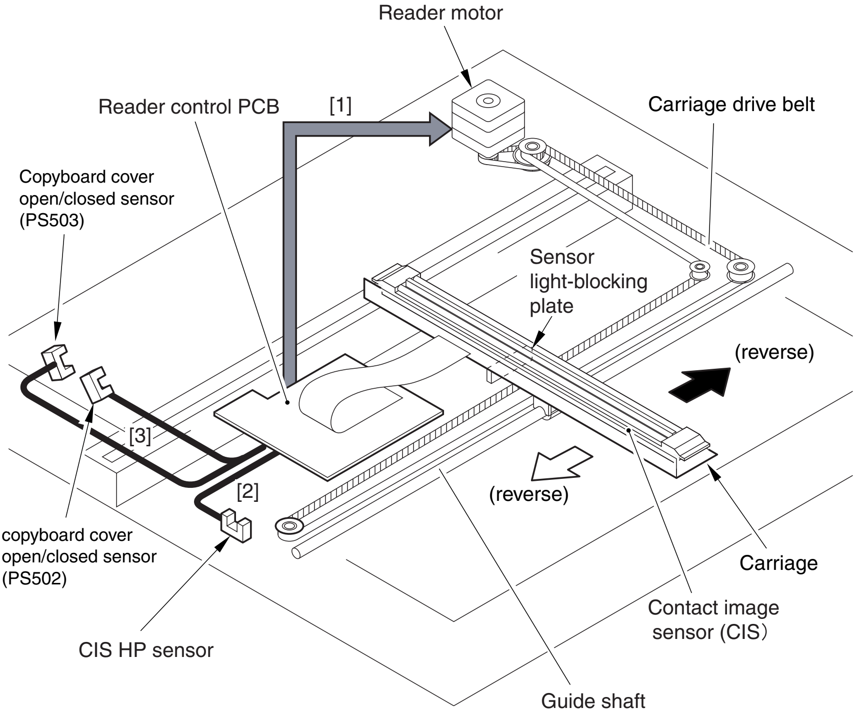
F-5-9

5.3 Various Control

5.3.1 Controlling the Scanner Drive System

5.3.1.1 Overview

The following components are associated with the scanner drive system:


Reader motor
Reader control PCB
[1]
Carriage drive belt
Copyboard cover open/closed sensor (PS503)
Sensor light-blocking plate
(reverse)
[3]
[2]
(reverse)
copyboard cover open/closed sensor (PS502)
Carriage
Contact image sensor (CIS)
CIS HP sensor
Guide shaft

F-5-10

[1] Reader Motor (M501) Drive Signal
used to turn on/off the motor and change its direction/speed of rotation.

[2] Contact Image Sensor (CIS) Home Position sennsaor (PS501) Detection Signal
used to indicate that the contact image sensor (CIS) is in home position,

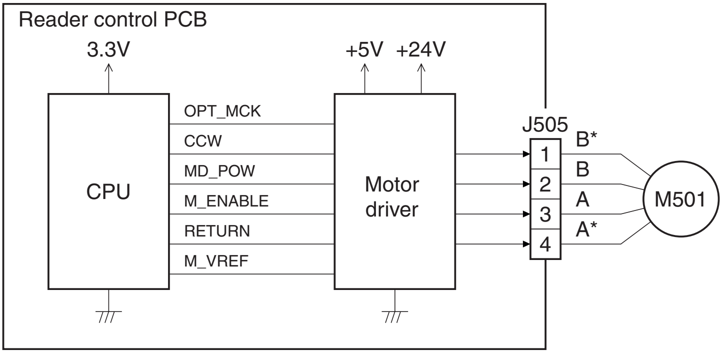
[3] Copyboard Cover Sensor (front, PS502; rear, PS503) Detection Sugnal
used to indicate the state (open/closed) of the copyboard cover.
used to turn on/off the motor and change its direction/speed of rotation.

[2] Contact Image Sensor (CIS) HP Sensor (PS501) Detection Signal
used to indicate that the contact image sensor (CIS) is in home position.

[3] Copyboard Cover Sensor (front, PS502; rear, PS503) Detection Signal
Used to indicate the state (open/closed) of the copyboard cover.

5.3.1.2 Reader Motor Control

The reader motor driver turns on/off the reader motor and controls its direction/speed of rotation.


Reader control PCB
3.3V
+5V
+24V
CPU
OPT_MCK
CCW
MD_POW
M_ENABLE
RETURN
M_VREF
Motor driver
J505
1
2
3
4
B*
B
A
A*
M501

F-5-11

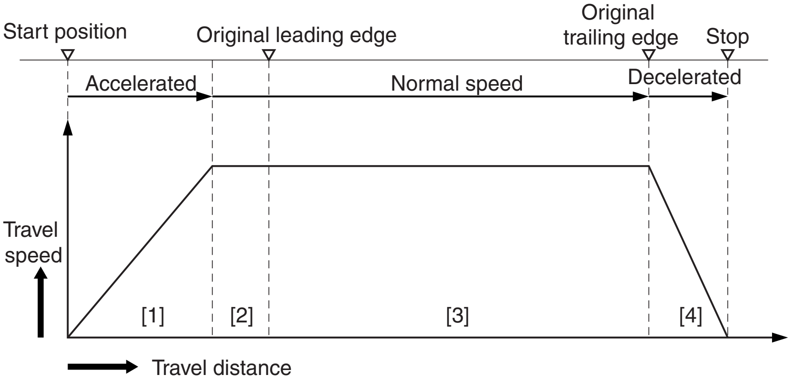
<Memo>
The machine uses any of the following scan speeds according to selected mode:

T-5-5

Function	Mode	Scan speed
Copy	full color mode	118 mm/sec
	black-and-white mode	118 mm/sec
SEND	full-color mode (originals other than of 300 dpi or lower; 320x450m 12"x18")	236 mm/sec
	full-color mode (originals of 300 dpi or lower; 320x450, 12"x18")	118 mm/sec
	black-and-white mode	236 mm/sec

a. Moving Forward to Scan an Image

when scanning the image, the machine controls the contact image sensor (CIS) by controlling the motor as follows:



[1] acceleration area: accelerates to a speed suited to the selected mode.
[2] margin area: drives to ensure a specific speed.
[3] image read area: scans an image at a specific speed.
[4] deceleration area: after the trailing edge of the image, decelerates and stops.

F-5-12

b. Moving in Reverse After an Image Scan

The machine maintains a specific speed (147 mm/sec) to move the contact image sensor (CIS) to shading position after making an image scan.

5.3.2 Contact Sensor

5.3.2.1 Overview

The machine uses a contact image sensor (CIS) to read images, line-by line.

T-5-6

Item	Description
Scanning lamp	used to illuminate originals.
Rod lens array	used to collect light reflected by originals.
CCD array	used to collect reflected light coming through a rod lens array.

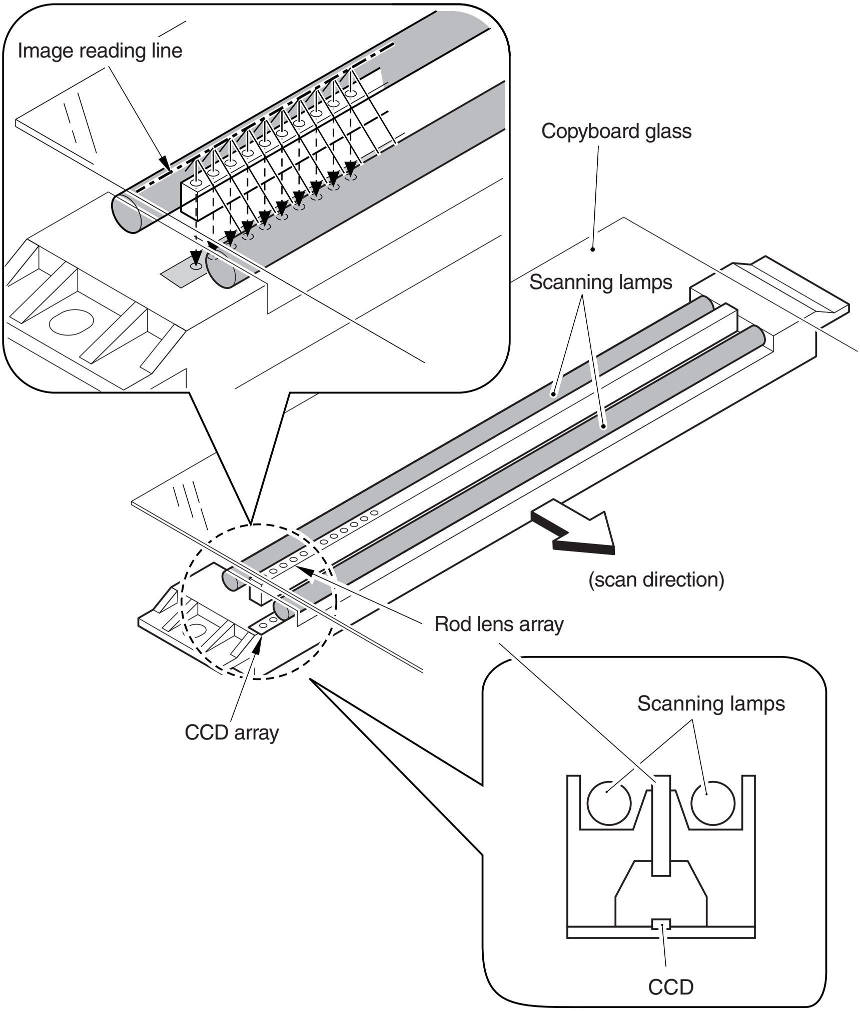


Image reading line
Copyboard glass
Scanning lamps
(scan direction)
Rod lens array
CCD array
Scanning lamps
CCD

F-5-13

5.3.2.2 Analog Control Inside the Contact Image Sensor (CIS)

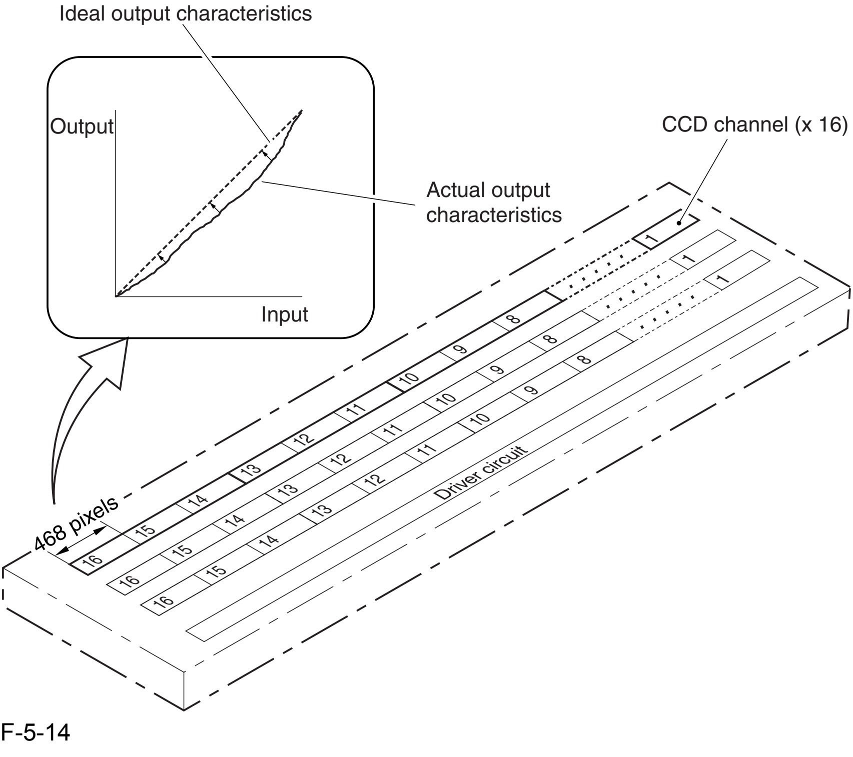
The contact image sensor (CIS) read images in keeping with the following flow of analog image processing:

uses a rod lens array to collect light reflected by the original.

-> receives light using a CCD array.

-> uses the CCD array to turn the light into an electrical signal (photo conversion), thus preparing output.

The machine's CCD array consists of 16 channels (units) in total. Each of these channels is equipped with an output correction table, and generates image signals after gain correction on input intensity signals.


Ideal output characteristics
Output
Input
Actual output characteristics
CCD channel (x 16)
468 pixels
16
15
14
13
12
11
10
9
8
1
Driver circuit

F-5-14

If any of the following occurs, be sure to execute the following service mode item to correct the output among the channels:

- there is a difference in the output of the image density among channels after replacement of the contact image sensor (CIS).

- the CCD-LUT setting is not 0 after replacement of the reader controller PCB.

<Service Mode>

- setting CIS unit gain correction data

  COPIER>OPTION>BODY>CCD-LUT

CCD Gain Fine Correction

  COPIER>FUNCTION>CCD>LUT-ADJ2

  (making adjustments using a D-10 chart)

5.3.3 Enlargement/Reduction

5.3.3.1 Changing the Magnification in Main Scanning Direction

Book mode, ADF in use

The machine reads the original in main scanning direction at 100%; any change needed in magnification is made by processing data on the main controller PCB (main).

5.3.3.2 Changing the Magnification in Sub Scanning Direction

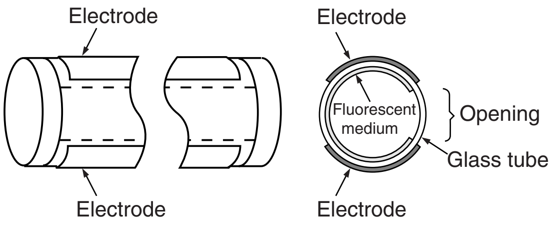
Book mode, ADF in use

The machine reads the original in sub scanning direction at 100%; any change needed in magnification is made by processing data on the main controller PCB (main).

5.3.4 Controlling the Scanning Lamp

5.3.4.1 Scanning Lamp

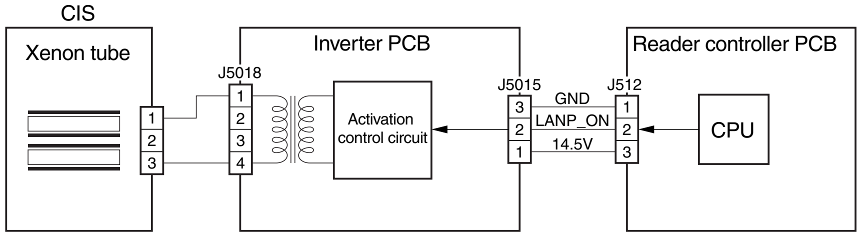
The machine's scanning lamp is a xenon lamp, in which xenon gas is sealed inside a tube. Along the glass tube are 2 electrodes, while the inside the glass tube is coated with phosphorous material. When a high-frequency voltage is applied to the electrodes, electrons occur within the gas, thus causing the phosphorous material to emit light.


Electrode
Electrode
Electrode
Electrode
Fluorescent medium
Opening
Glass tube

F-5-15

5.3.4.2 Overview

The scanning lamp is controlled for the following, and is composed of the items indicated:
- activation/de-activation
- error detection


CIS
Xenon tube
1
2
3
Inverter PCB
J5018
1
2
3
4
Activation control circuit
J5015
3
2
1
GND
LANP_ON
14.5V
J512
1
2
3
Reader controller PCB
CPU

F-5-16

5.3.4.3 Activation Control

The scanning lamp is turned on/off using the drive signal (LAMP_ON) generated by the CPU of the reader controller PCB. In response to the signal, the inverter PCB uses the drive voltage (+16 V) from the reader controller PCB to generate high-frequency voltage in the activation control circuit to turn on the xenon lamp.

5.3.4.4 Error Detection

An error in the intensity of the lamp is checked against the presence/absence of a fault when the lamp is initially tuned on (e.g., at time of shading correction).

E225 (CIS intensity error)
- fault in the inverter PCB
- fault in the reader controller PCB
- fault in the contact image sensor (CIS)
- fault in the flexible cable (poor contact)

5.3.5 Detecting the Size of Originals

5.3.5.1 Overview

The machine identifies the size of an original based on the measurements it takes of the light reflected by the original at specific points of the CCD (inside the CIS) and the output of the reflection sensor.

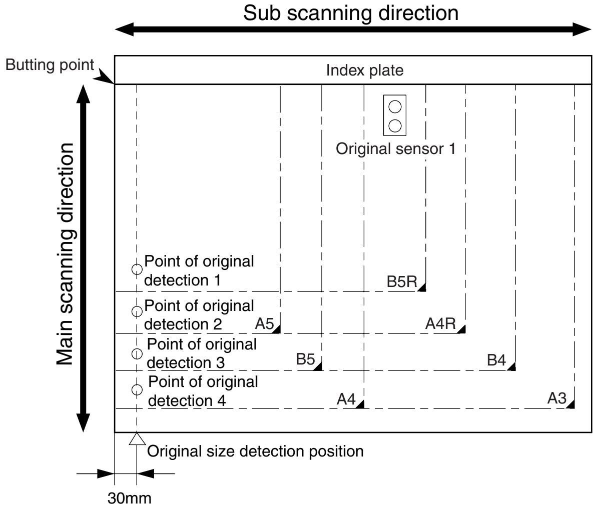
main scanning direction: CCD (4 points for AB; 3 points for Inch)
sub scanning direction: reflection photosensor (1 point for AB; 1 point for Inch)

1) External Light Search (main scanning direction only)
   While keeping the scanning lamp on, the machine measures the level of light at specific points of the CCD for main scanning direction.
2) Detecting the Sensor Output Level
   The machine turns on the scanning lamp, and measures the CCD levels at individual points of detection in main scanning direction.
   The machine also turns on the reflection photosensor and measures its output for sub scanning direction.
   The machine identifies the size of the original based on the resulting combination of the measurement and the output.

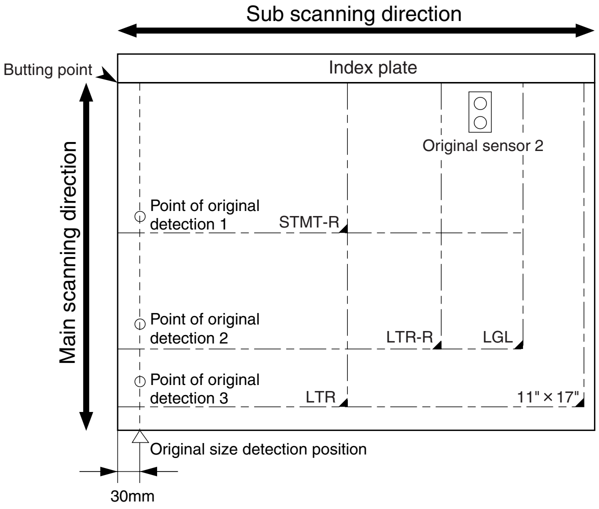
5.3.5.2 Points of Original Size Detection

The length in main scanning direction is measured by checking the intensify of light at specific points while moving the contact image sensor (CIS) to a point 30 mm from the leading edge of the original. The length in sub scanning direction, on the other hand, is measured by means of the sensors mounted to the following locations:

AB-Configuration


Sub scanning direction
Butting point
Index plate
Main scanning direction
Original sensor 1
Point of original detection 1
Point of original detection 2
Point of original detection 3
Point of original detection 4
B5R
A5
A4R
B5
B4
A4
A3
Original size detection position
30mm

Inch-Configuration


Sub scanning direction
Butting point
Index plate
Main scanning direction
Original sensor 2
Point of original detection 1
STMT-R
Point of original detection 2
LTR-R
LGL
Point of original detection 3
LTR
11" × 17"
Original size detection position
30mm

F-5-17

5.3.5.3 Overview of Detection Operation

- Book Mode

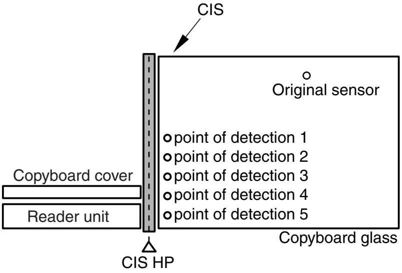
1 original (A4R), copyboard cover (or ADF) closed

1. Standby

CIS: in home position

xenon lamp: off

original sensor: off


CIS
Original sensor
point of detection 1
point of detection 2
point of detection 3
point of detection 4
point of detection 5
Copyboard cover
Reader unit
Copyboard glass
CIS HP

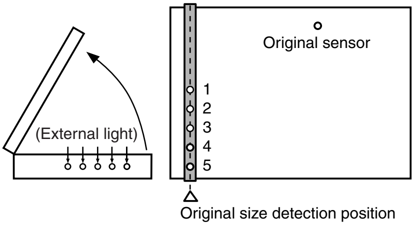
F-5-18

2. Copyboard Cover Opened

CIS: moves to point of original detection

xenon lamp: off

original sensor: off

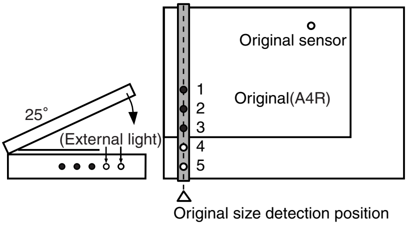

Original sensor
1
2
3
4
5
(External light)
Original size detection position

F-5-19

3. Copyboard Cover Closed (15 deg C or more, less than 25 deg C)

a. External Light Detection

The machine executes an external light search.

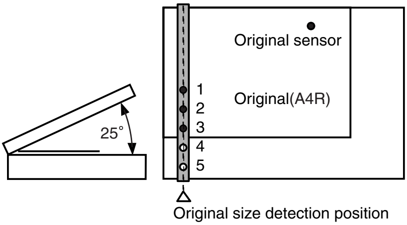

Original sensor
Original(A4R)
25°
(External light)
1
2
3
4
5
Original size detection position

F-5-20

b. Size Detection in Sub Scanning Direction

The copyboard cover sensor identifies a "closed" state.

CIS: at point of original detection
xenon lamp: off
original sensor: on


Original sensor
Original(A4R)
25°
1
2
3
4
5
Original size detection position

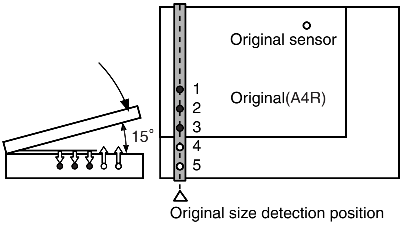
F-5-21

4. Copyboard Cover Closed (less than 15 deg C)

c. Size Detection in Main Scanning Direction

The machine turns on the xenon lamp inside the CIS, and uses the CCD inside the CIS to check the reflected light.

CIS: at point of original detection
xenon lamp: on
original sensor: on

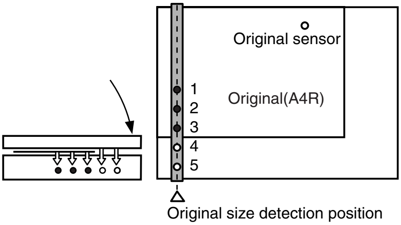

Original sensor
Original(A4R)
15°
1
2
3
4
5
Original size detection position

F-5-22

5. Copyboard Cover Fully Closed

After the copyboard cover sensor has identified a "closed" state, the machine checks for a change in the output level of the original sensor (CCD point of detection) for 3 sec. If there is no change in the level of output, the machine identifies the condition to indicate the presence of an original.

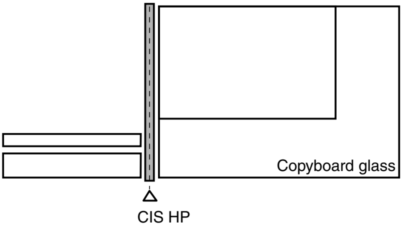
The machine uses combinations of changes in the levels of 6 locations to identify the size of the original:


Original sensor
Original(A4R)
1
2
3
4
5
Original size detection position

F-5-23

6. Standby (in wait for a press on the Start key)

CIS: moves to home position
xenon lamp: off
original sensor: off



F-5-24

AB-Configuration

Original size	1	2	3	4	5	Original sensor1
A3	○	○	○	○	○	○
A4	○	○	○	○	○	●
B4	○	○	○	○	●	○
B5	○	○	○	○	●	●
A4R	○	○	○	●	●	○
A5	○	○	○	●	●	●
B5R	○	○	●	●	●	○
No original	●	●	●	●	●	●

Inch-Configuration

Original size	1	2	3	Original sensor2
11"X17"	○	○	○	○
LTR	○	○	○	●
LGL	○	○	●	○
LTR-R	○	○	●	●
STMT-R	○	●	●	●
No original	●	●	●	●

○: Change absent
●: Change present

F-5-25

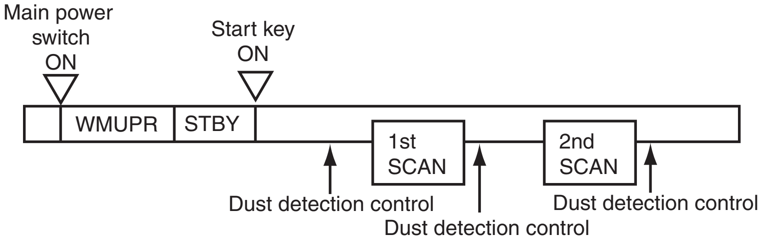
5.3.6 Dirt Sensor Control

5.3.6.1 Overview

When reading an original, the machine changes the point of reading or corrects image data in reference to the presence/absence of dust on the stream reading glass/ADF platen roller, thereby avoiding the effects of dust on images. The machine executes this control only when the ADF is used and, in addition, when it is closed.

<Timing of Control>

- at the end of a job
- between sheets (each time a sheet is read)
- at the start of a job (only if any of the following is met)
  /first job after power-on
  /presence of dust at all points of detection at the end of the previous job
  /failure of dust detection at the end of the previous job (e.g., the ADF is opened)



F-5-26

<Particulars of Control>

- At the End of a Job (dust detection)

The contact image sensor (CIS) checks the light reflected by the platen roller of the ADF at a point of reading to find out the presence/absence of dust. If the presence of dust is detected, the contact image sensor moves to the next candidate point (2 times max.; A -> B -> C; B -> C -> A; or C -> A -> B).

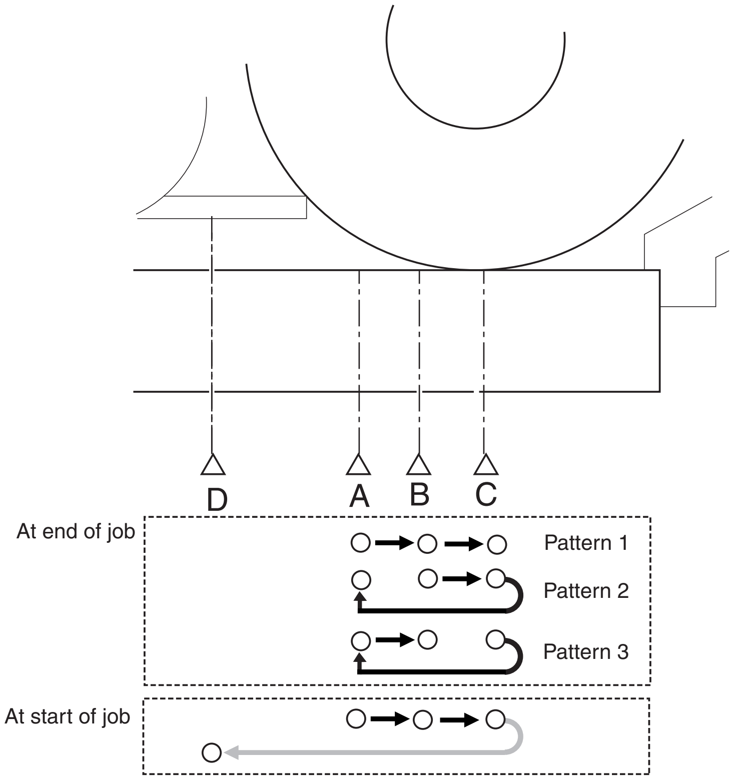
The point identified will be used as the point of reading for the next job.

⚠

- For the control at the end of a job, the sensor will never move to point D.
- For the control at the end of a job, a message prompting cleaning of the glass surface will be indicated if an original is placed in the ADF while the presence of dust has been detected at all points (A, B, C). The Start key is disabled until the message is cleared.

- At the Start of a Job (dust avoidance)

The same detection mechanism as used at the end of a job is executed; if the presence of dust is detected at all points (A, B, C), the sensor is moved to point D for reading operation. If the control is at the end of a job that takes place at point D, it will be after moving the sensor to point D.


D
A
B
C
At end of job
Pattern 1
Pattern 2
Pattern 3
At start of job

F-5-27

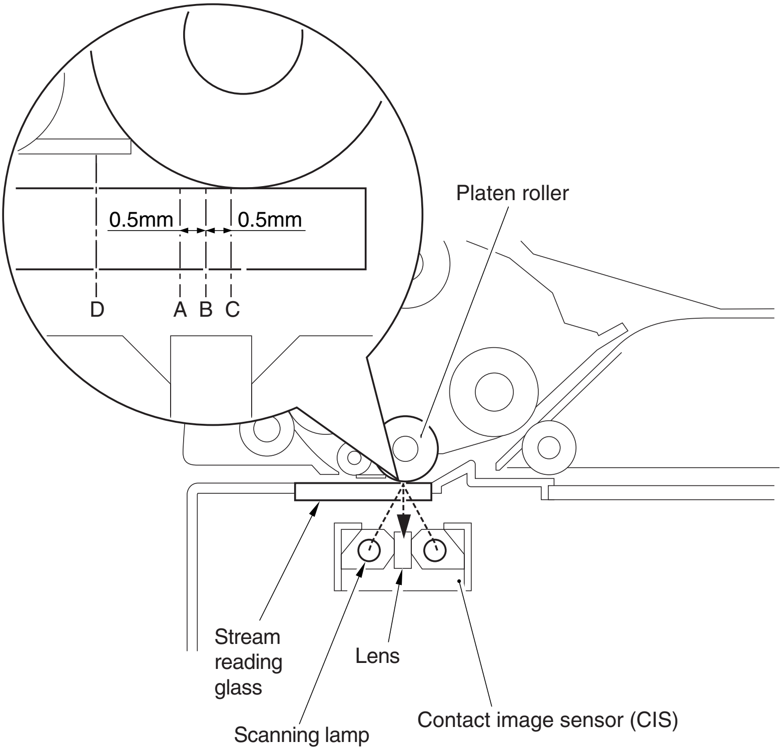
- Between Sheets

The contact image sensor (CIS) is not moved for detection of dust.

The machine undertakes reading at a point determined by control executed at the end of a job or at the start of a job; if the presence of dust is identified, the machine executes image correction.

T-5-7

Location		Image correction	Gain correction against reference position
A	reading reference location	yes	no
B	point about 0.5 mm toward roller inside from reference position	yes	no
C	point about 1.0 mm toward roller inside from reference position	yes	no
D	point about 4.0 mm toward roller outside from reference position (no dust detection)	no	yes


0.5mm
0.5mm
D
A
B
C
Platen roller
Stream reading glass
Lens
Scanning lamp
Contact image sensor (CIS)

F-5-28

<Service Mode>

COPIER>OPTION>BODY>DST-POS (level 1)

- use it to set an original reading position when the ADF is in use.

COPIER>OPTION>BODY>DFDST-L1 (level 1)

- use it to adjust the dust reading detection level for between sheets.

COPIER>OPTION>BODY>DFDST-L2 (level 1)

- use it to adjust the dust reading detection level for the end of a job.

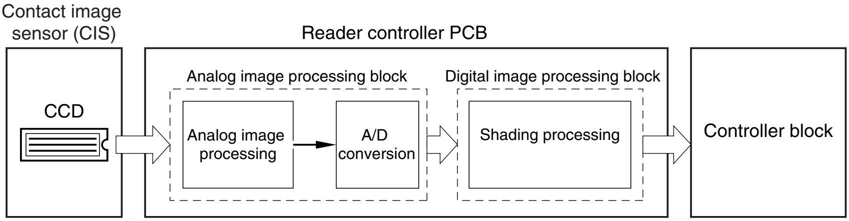
5.3.7 Image Processing

5.3.7.1 Overview

The image processing system has the following major specifications and functions:

T-5-8

- CCD	Number of lines: 3 (RGB, 1 line each) Number of pixels: 7488 Size of pixel: 42.3 um
- Shading Correction	Shading correction; executed for each job Shading adjustment: executed in service mode


Contact image sensor (CIS)
Reader controller PCB
CCD
Analog image processing block
Digital image processing block
Analog image processing
A/D conversion
Shading processing
Controller block

F-5-29

The PCB used by the image processing system has the following functions:

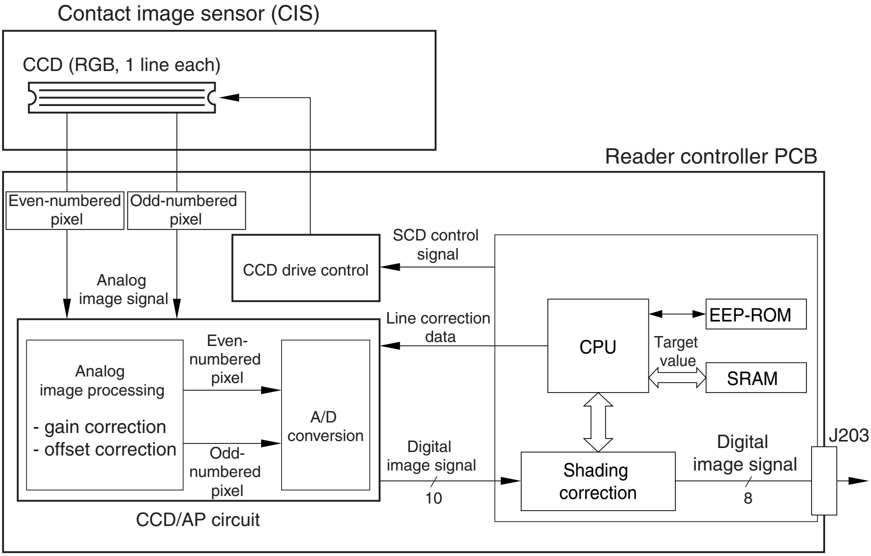
T-5-9

- Reader Controller PCB	drives the CCD, performs analog image processing, performs A/D conversion, performs shading correction

The machine processes images using its reader controller PCB line by line, and the processing consists in the following;

1. Analog Image Processing
- drives the CCD
- performs gain correction and offset correction for the CCD output
- performs A/D conversion for the CCD output

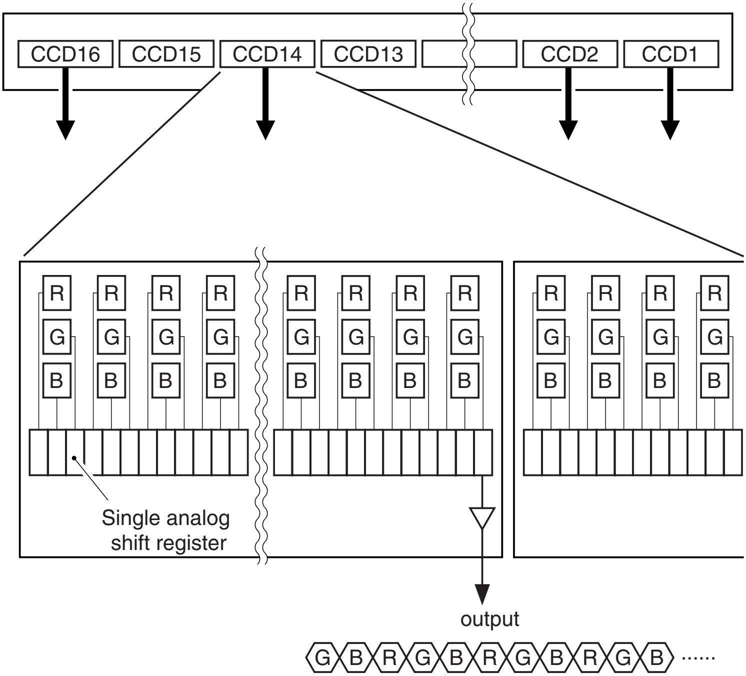
2. Digital image Processing
- performs shading correction


Contact image sensor (CIS)
CCD (RGB, 1 line each)
Reader controller PCB
Even-numbered pixel
Odd-numbered pixel
CCD drive control
SCD control signal
Analog image signal
Line correction data
CPU
EEP-ROM
Target value
SRAM
Analog image processing
- gain correction
- offset correction
Even-numbered pixel
Odd-numbered pixel
A/D conversion
Digital image signal
10
Shading correction
Digital image signal
8
J203
CCD/AP circuit

F-5-30

5.3.7.2 Driving the CCD

The machine's CCD sensor is a linear image sensor that consists of 3 lines (RGB, 1 line each), and it is composed of 7488-pixel photocells. The signals generated through photo conversion at the light-receiving segment are sent as analog signals according to pixels in the order of G, B, and R.


CCD16
CCD15
CCD14
CCD13
CCD2
CCD1
R
G
B
Single analog shift register
output
G B R G B R G B R G B ......

F-5-31

5.3.7.3 Gain Correction and Offset Correction for the CCD Output

The analog video signal from the CCD is subjected to gain correction (in which the rate of amplification is corrected to a specific level) and offset correction (in which the output voltage in the absence of incident light is also corrected to a specific level).

5.3.7.4 A/D Conversion of the CCD Output

The analog signal after correction is then converted into 8-bit digital signals that comply with the individual levels of pixel voltage by the A/D converter.

5.3.7.5 Shading Correction (outline)

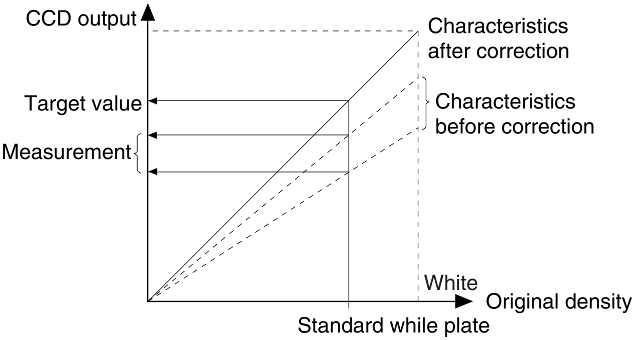
An original of even density does not necessarily mean uniform CCD output because of the following factors:

1. variation in the sensitivity of each pixel of the CCD
2. uneven intensity across the rod lens array
3. difference in intensity of light between the center and ends of the scanning lamp
4. deterioration of the scanning lamp

The machine performs shading correction to correct any discrepancy in the output of the CCD. It performs shading correction at power-on and or for each job.

5.3.7.6 Shading Correction

The machine executes shading correction for each scan of the original. It measures the density of the standard white plate, and compares the measurement against the target value stored in the shading correction circuit; the machine then sets up the difference as the shading correction value, and uses it to correct any variation among CCD pixel when scanning the originals, thus evening out the image density levels.


CCD output
Characteristics after correction
Target value
Characteristics before correction
Measurement
White
Original density
Standard while plate

F-5-32

5.3.7.7 Shading Adjustment

The machine measures the density of the standard while plate, and uses the result as density data. The data is then subjected to computation to obtain the target value for use during shading correction.

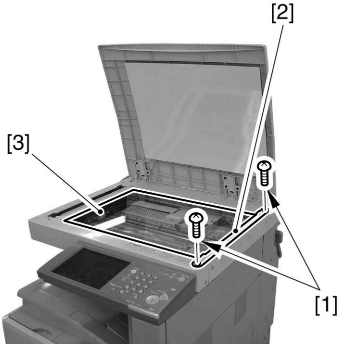
5.4 Parts Replacement Procedure

5.4.1 Copyboard Glass

5.4.1.1 Removing the Copyboard Glass

1) Open the copyboard cover (or ADF).

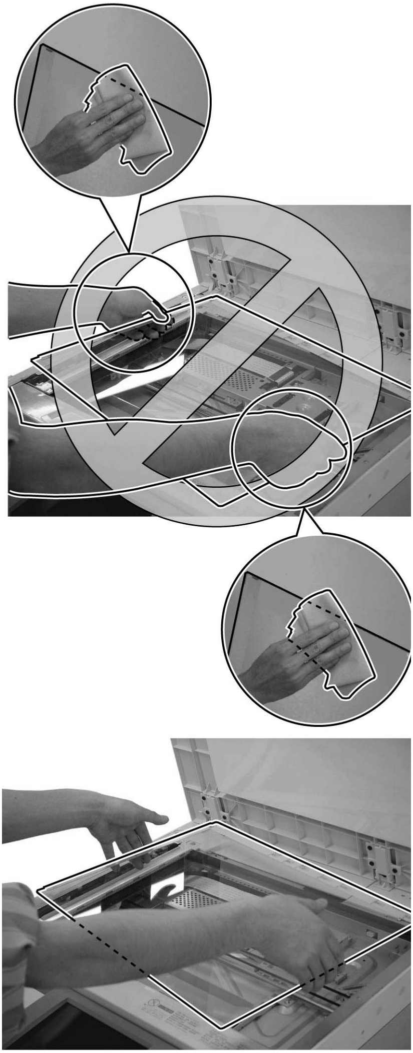
2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].



F-5-33

⚠When removing the copyboard glass, take care not to touch the following:
- glass surface
- standard white plate

The presence of dirt can cause white/ black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.



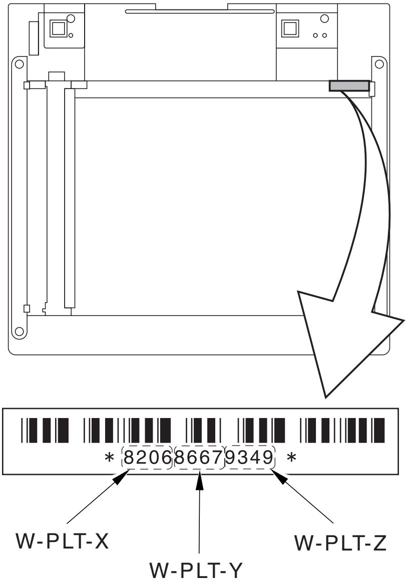
F-5-34

5.4.1.2 After Replacing the Copyboard Glass

A. Enter the value indicated by the bar code found at the upper right on the copyboard glass (copyboard cover) using the following service mode items:

COPIER>ADJUST>CCD>W-PLT-X
COPIER>ADJUST>CCD>W-PLT-Y
COPIER>ADJUST>CCD>W-PLT-Z

(standard white plate white level data X, Y, Z)

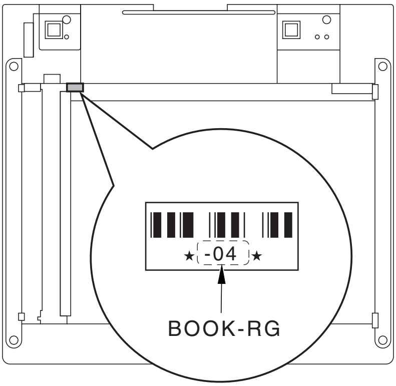


F-5-35

B. Enter the value indicated by the bar code found at the upper left of the copyboard glass (copyboard sheet) using the following service mode item:

COPIER>ADJUST>CCD>BOOK-RG

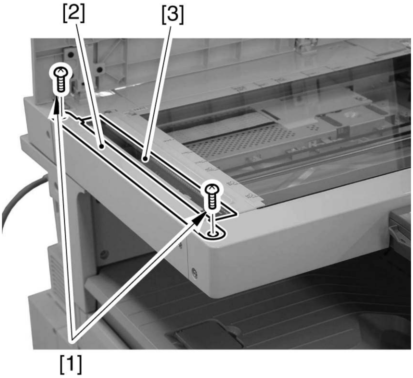
(offset value against color displacement caused by copyboard glass)



F-5-36

5.4.1.3 Removing the ADF Reading Glass

1) Open the copyboard glass (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2].
3) Remove the ADF reading glass [3].



F-5-37

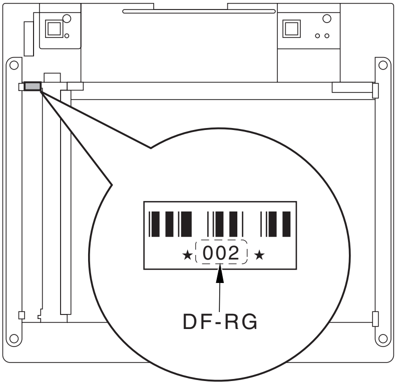
⚠When removing the ADF reading glass, take care not to touch the glass surface.
The presence of dirt can cause white/ black lines in the images. If dirt is found, be sure to clean it using lint-free paper moistened with alcohol.

5.4.1.4 After Replacing the ADF Reading Glass

Enter the value indicated by the bar code found on the ADF reading glass using the following service mode item:

COPIER>ADJUST>CCD>DF-RG

(offset value against color displacement caused by stream reading glass)



F-5-38

5.4.2 Reader Controller PCB

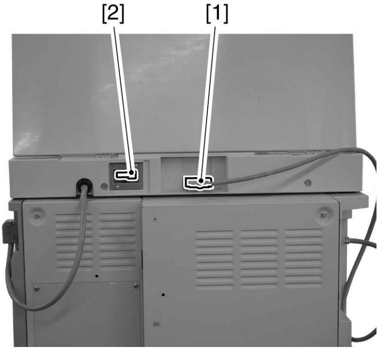
5.4.2.1 Before Replacing the Reader Controller PCB

⚠If an ADF is used, be sure to execute P-PRINT of service mode to obtain its printout:
COPIER>FUNCTION>MISC-P>P-PRINT

5.4.2.2 Removing the Reader Rear Cover

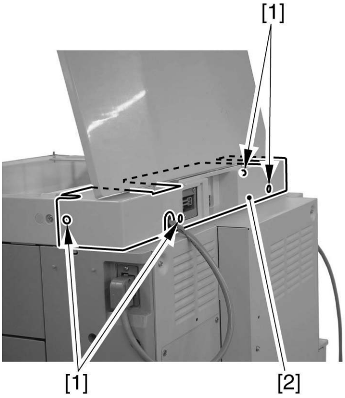
1) Open the copyboard cover (or the ADF).
2) Disconnect the reader communications cable [1] and the ADF communications

cable [2] (if equipped with an ADF).



F-5-39

3) Remove the 4 screws [1], and detach the reader rear cover [2].

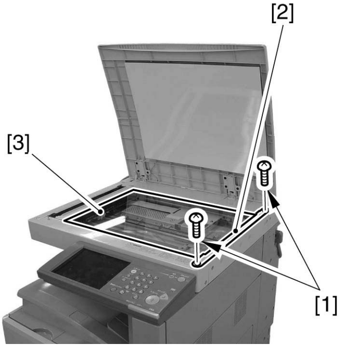


F-5-40

5.4.2.3 Removing the Copyboard Glass

1) Open the copyboard cover (or ADF).

2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].

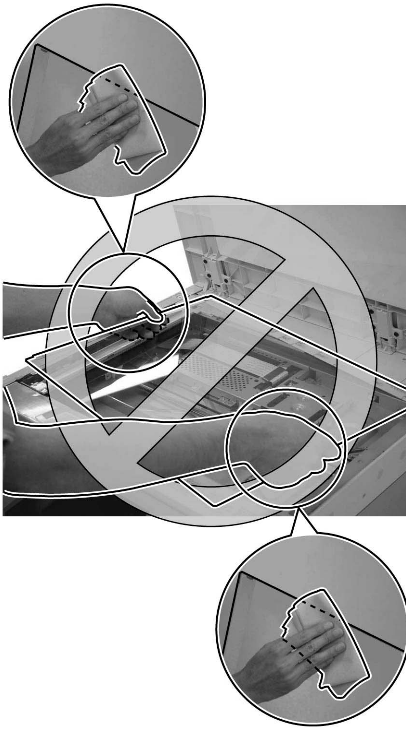


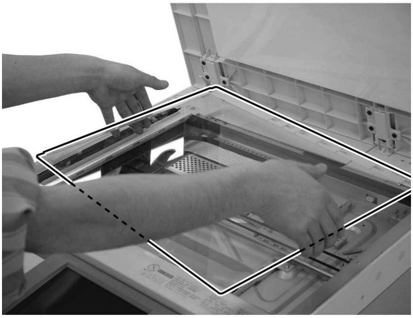
F-5-41

⚠When removing the copyboard glass, take care not to touch the following:

- glass surface
- standard white plate

The presence of dirt can cause white/ black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.

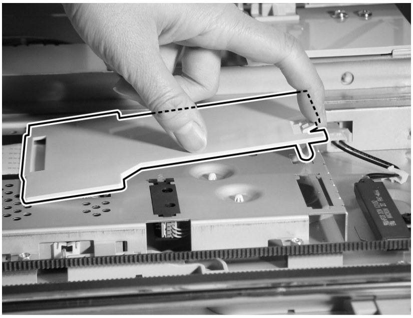




F-5-42

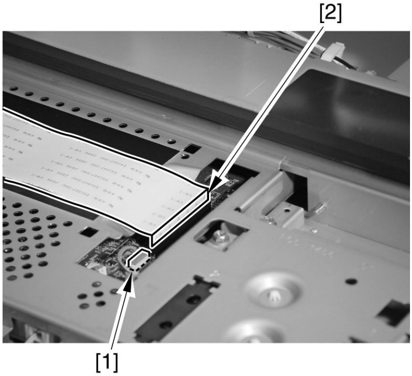
5.4.2.4 Removing the Reader Controller PCB

1) Remove the cover [1].



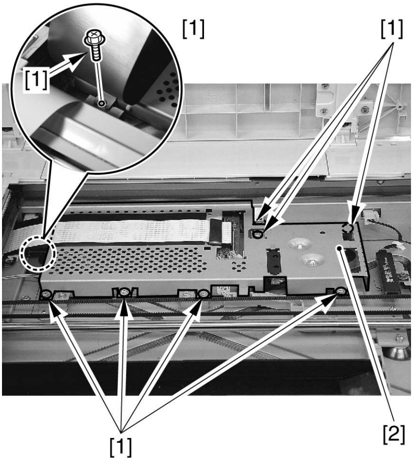
F-5-43

2) Disconnect the connector [1], and detach the flexible cable [2].



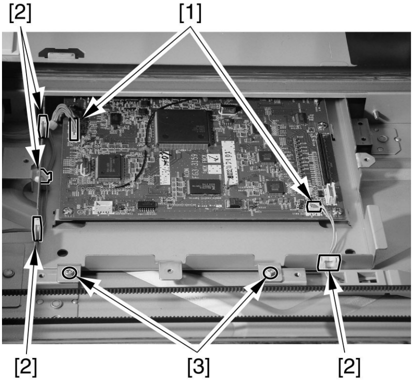
F-5-44

3) Remove the 8 screws [2], and detach the cover [3].



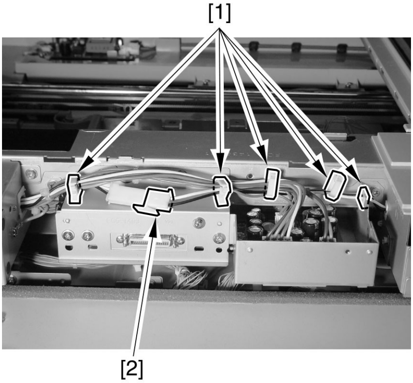
F-5-45

4) Disconnect the 2 connectors [1], and detach the 4 wire saddles [2]; then, remove the 2 screws [3].



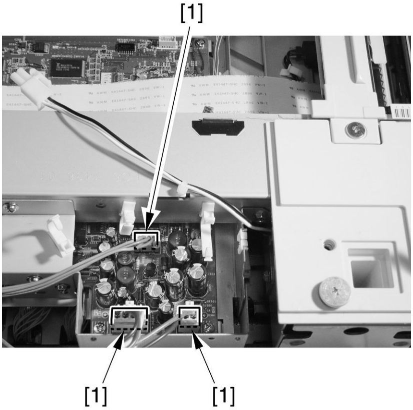
F-5-46

5) Go to the back of the machine, and free the cable from the 5 wire saddles [1]; then, disconnect the connector [2].



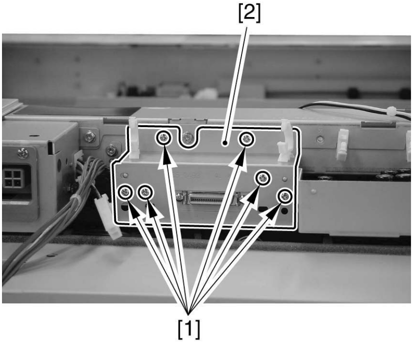
F-5-47

6) Disconnect the 3 connectors [1].



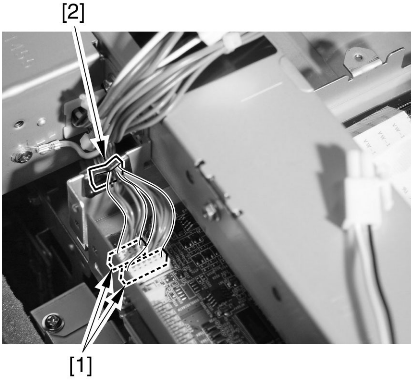
F-5-48

7) Remove the 6 screws [1], and detach the cover [2].



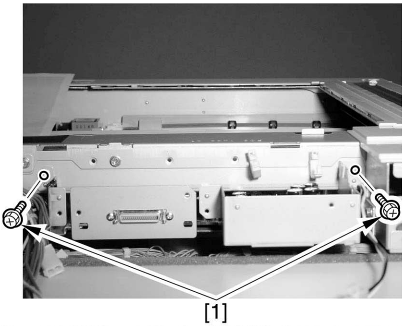
F-5-49

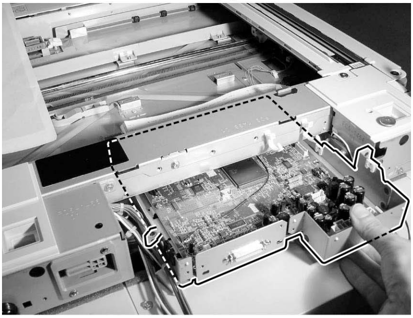
8) Disconnect the 2 connectors [1], and free the cable from the wire saddle [2].



F-5-50

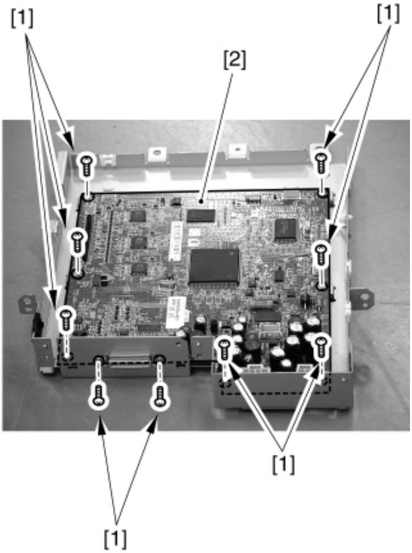
9) Remove the 2 screws [1], and pull out the reader controller PCB base [2].





F-5-51

10) Remove the 9 screws [1], and detach the reader controller PCB [2].



F-5-52

5.4.2.5 After Replacing the Reader Controller PCB or After Initializing the RAM

⚠

- Before replacing the reader controller PCB, be sure to generate the latest P-PRINT printout.

<if you are initializing the RAM of the reader controller without replacing the PCB>

- Using the SST, upload the reader controller backup data; after initializing the RAM, download the data, thus eliminating the need for the following adjustment.

1. Reader Unit-Related Adjustment

1) Using the SST, download the latest system software (R-CON).

2) Make the following selections in service mode: COPIER>FUNCTION>CLEAR>R-CON; then, press the OK key to initialize the RAM. Thereafter, turn off and then on the main power.

3) Enter the appropriate values using the following service mode items:

a. standard white plate white level data

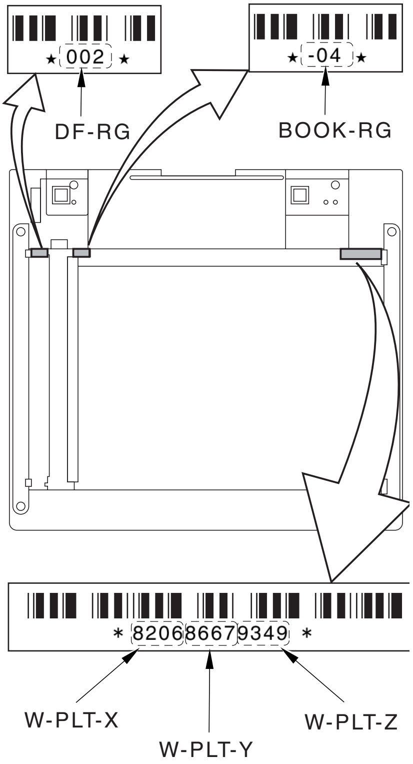
COPIER>ADJUST>CCD>W-PLT-X,Y,Z

b. offset value against color displacement for copyboard glass (copyboard cover)

COPIER>ADJUST>CCD>BOOK-RG

c. offset value against color displacement for copyboard glass (ADF)

COPIER>ADJUST>CCD>DF-RG



F-5-53

d. service label (behind reader unit left cover) values

d-1. CIS read position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-X

d-2. main scanning direction position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-Y

d-3. shading position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-S

d-4. sub scanning direction color displacement correction

COPIER>ADJUST>CCD>CCDU-RG

d-5. main/sub scanning direction MTF value

COPIER>ADJUST>CCD>MTF-MG,SG

d-6. auto gradation correction target value

COPIER>ADJUST>PASCAL>OFST-P-Y,M,C,K

⚠If the value of the following was not 0 before the replacement of the reader controller PCB: COPIER>OPTION>BODY>CCD-LUT.

Set a value other than '0' once again, and make the following adjustments using the D-10 Chart.

COPIER>FUNCTION>CCD>LUT-ADJ2

2. ADF-Related Adjustment

⚠The machine keeps ADF-related service mode data in the RAM of the reader controller; as such, you will have to make the appropriate adjustments if

you have replaced the reader controller or initialized the RAM.

1) Enter the values indicated in the P-PRINT printout you have previously generated for the following:

a. main scanning direction position adjustment (stream reading)

COPIER>ADJSUT>ADJ-XY>ADJ-Y-DF

b. original stop position adjustment

FEEDER>ADJSUT>DOCST

c. original feed speed (magnification) adjustment

FEEDER>ADUST>LA-SPEED

2) Make adjustments using the following items:

a. tray width adjustment

FEEDER>FUNCTION>TRY-A4

FEEDER>FUNCTION>TRY-A5R

FEEDER>FUNCTION>TRY-LTR

FEEDER>FUNCTION>TRY-LTRR

b. CIS read position adjustment (stream reading)

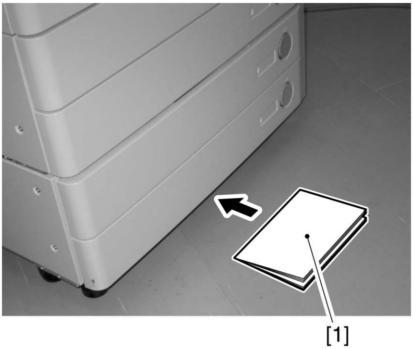
COPIER>FUNCTION>INSTALL>STRD-POS

c. white level adjustment

COPIER>FUNCTION>CCD>DF-WLVL1

COPIER>FUNCTION>CCD>DF-WLVL2

When you have finished the foregoing adjustments, put the P-PRINT printout [1] you have previously generated in the service book cassette to replace the old P-PRINT printout.



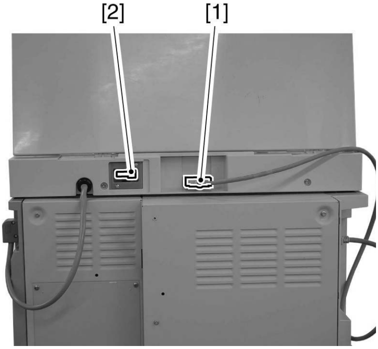
F-5-54

5.4.3 Inverter PCB

5.4.3.1 Removing the Reader Rear Cover

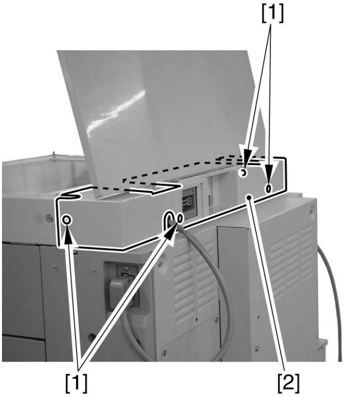
1) Open the copyboard cover (or the ADF).

2) Disconnect the reader communications cable [1] and the ADF communications cable [2] (if equipped with an ADF).



F-5-55

3) Remove the 4 screws [1], and detach the reader rear cover [2].

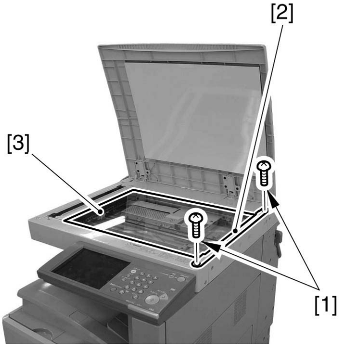


F-5-56

5.4.3.2 Removing the Copyboard Glass

1) Open the copyboard cover (or ADF).

2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].

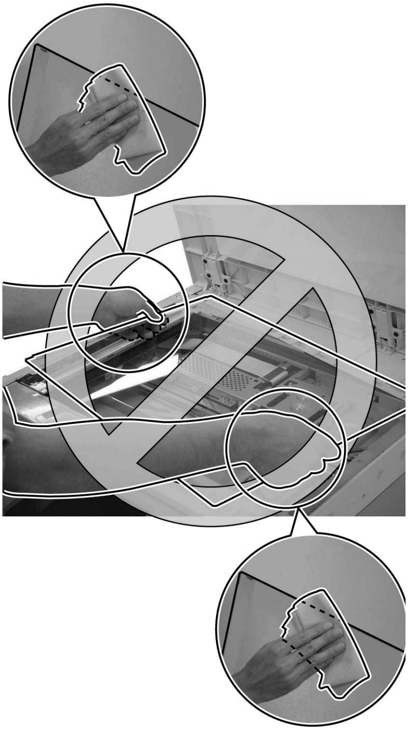


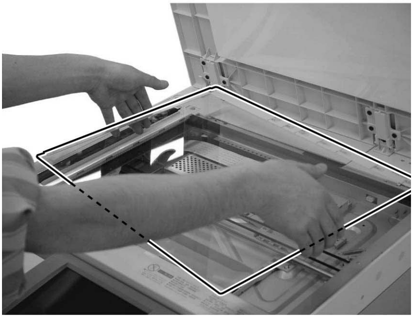
F-5-57

⚠When removing the copyboard glass, take care not to touch the following:

- glass surface
- standard white plate

The presence of dirt can cause white/black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.

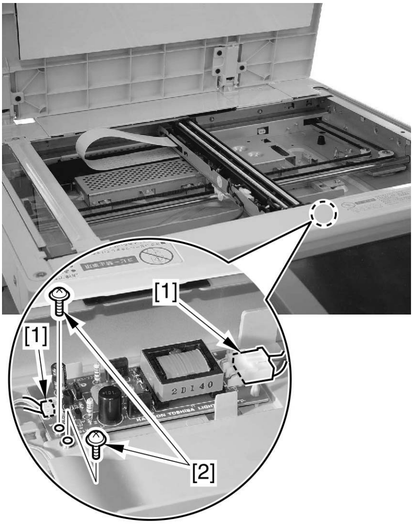




F-5-58

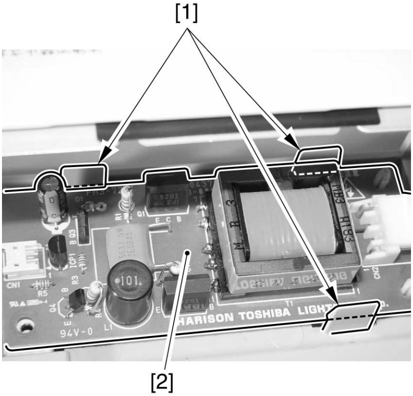
5.4.3.3 Removing the Inverter PCB

1) Disconnect the 2 connectors [1], and remove the 2 screws [2].



F-5-59

2) While freeing the 3 hooks [1], detach the inverter PCB [2].



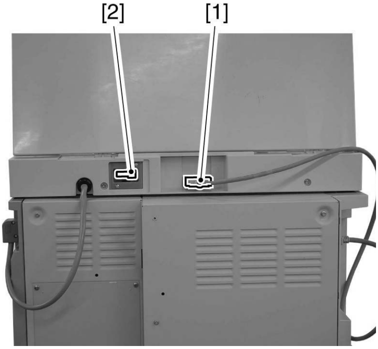
F-5-60

5.4.4 Scanner Motor

5.4.4.1 Removing the Reader Rear Cover

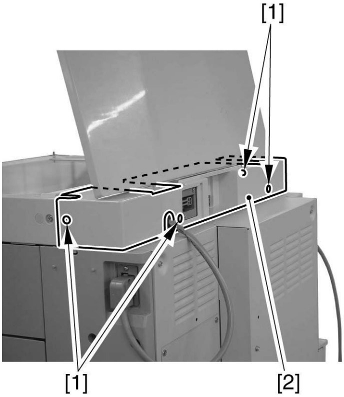
1) Open the copyboard cover (or the ADF).

2) Disconnect the reader communications cable [1] and the ADF communications cable [2] (if equipped with an ADF).



F-5-61

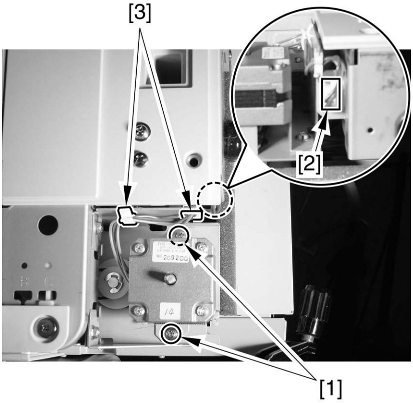
3) Remove the 4 screws [1], and detach the reader rear cover [2].



F-5-62

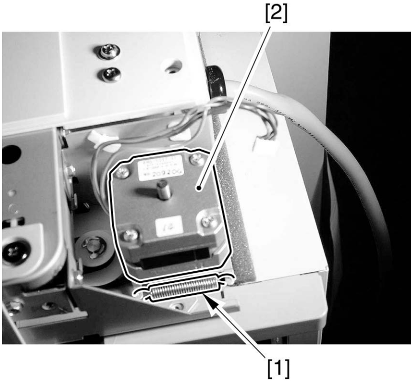
5.4.4.2 Removing the Scanner Motor

1) Remove the 2 screws [1]; then, disconnect the connector [2], and detach the 2 wire saddles [3].



F-5-63

2) Remove the spring [1], and detach the scanner motor [2].



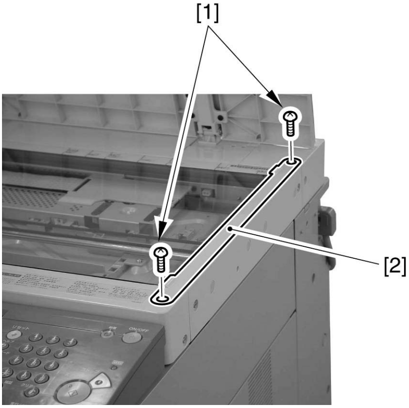
F-5-64

5.4.5 Contact Sensor

5.4.5.1 Removing the Reader Front Cover

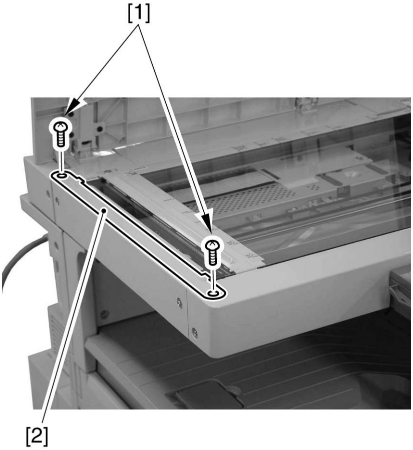
1) Open the copyboard cover (or ADF).

2) Remove the 2 screws [1], and detach the copyboard glass retainer (right) [2].



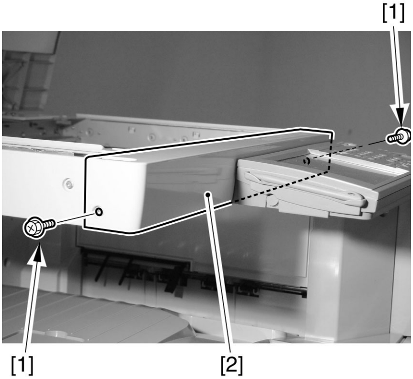
F-5-65

3) Remove the 2 screws [1], and detach the copyboard glass retainer (left) [2].



F-5-66

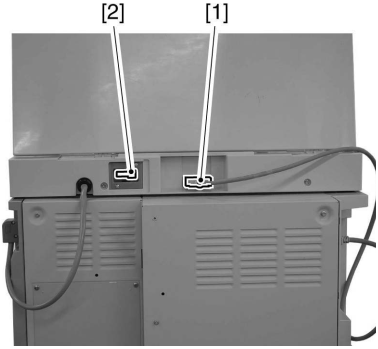
4) Remove the 2 screws [3], and detach the reader front cover [4].



F-5-67

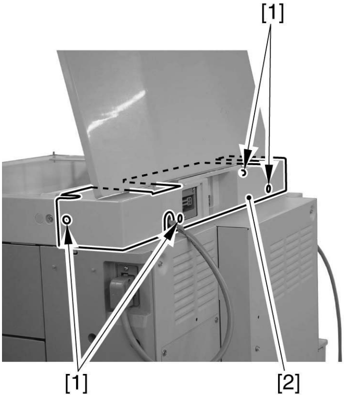
5.4.5.2 Removing the Reader Rear Cover

1) Open the copyboard cover (or the ADF).
2) Disconnect the reader communications cable [1] and the ADF communications cable [2] (if equipped with an ADF).



F-5-68

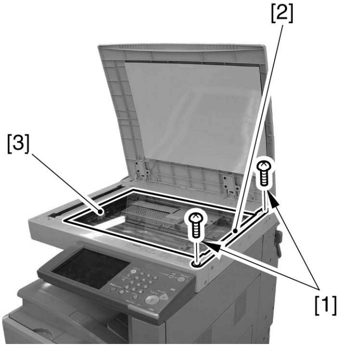
3) Remove the 4 screws [1], and detach the reader rear cover [2].



F-5-69

5.4.5.3 Removing the Copyboard Glass

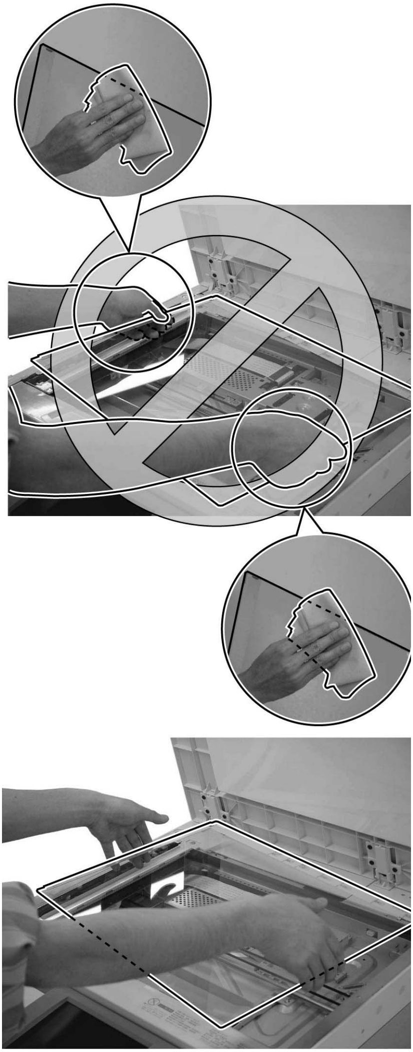
1) Open the copyboard cover (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].



F-5-70

⚠When removing the copyboard glass, take care not to touch the following:
- glass surface
- standard white plate

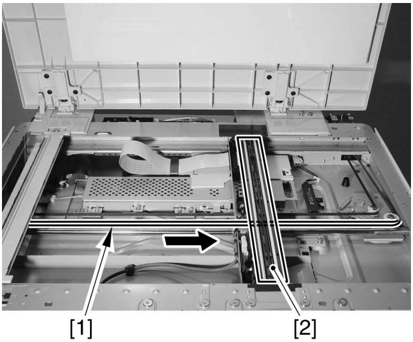
The presence of dirt can cause white/ black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.



F-5-71

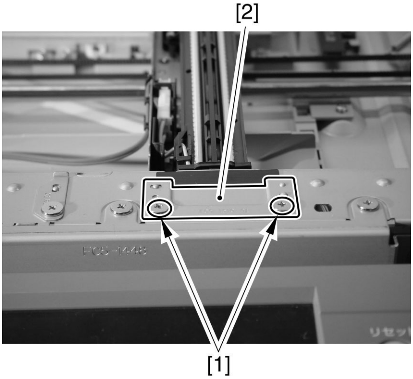
5.4.5.4 Removing the Contact Image Sensor (CIS)

1) Pull the drive belt (front) [1] in the direction of the arrow so that the contact image sensor (CIS) [2] will move where it is shown in the figure.



F-5-72

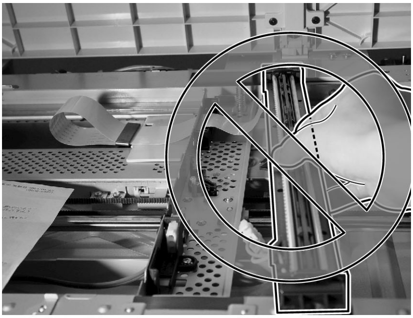
2) Remove the 2 screws [1], and detach the plate [2].

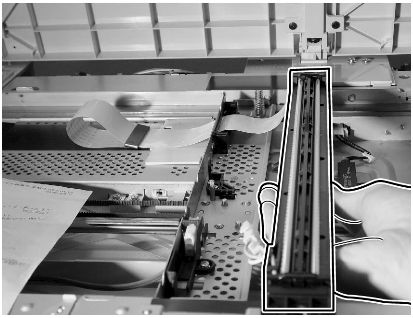


F-5-73

3)

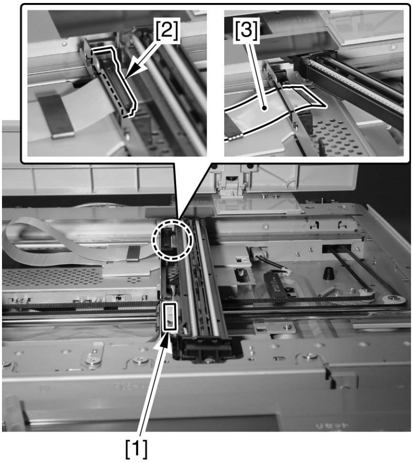
⚠When detaching the contact sensor unit, take care not to touch the scanning lamp and the lens assembly.





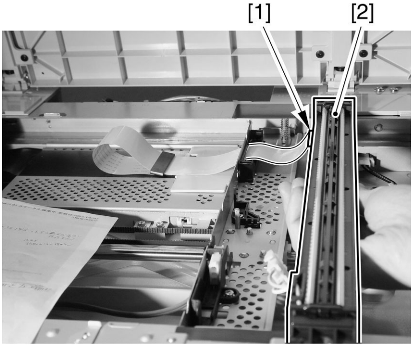
F-5-74

Disconnect the connector [1], and remove the flexible cable retainer [2]; then, remove the other flexible cable [3], and detach the contact image sensor (CIS).



F-5-75

⚠When mounting it, be sure to connect the flexible cable [1] before fitting the contact image sensor (CIS) [2] to the machine.

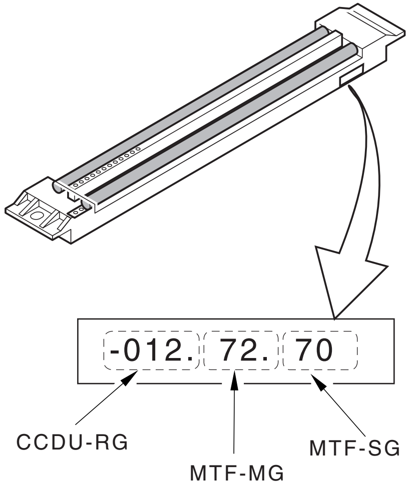


F-5-76

5.4.5.5 After Replacing the CIS

Be sure to enter the values indicated on the CIS label attached to the contact image sensor (CIS) using the following service mode items:

COPIER>ADJUST>CCD>CCDU-RG
(offset value against color displacement caused by CIS)
COPIER>ADJUST>CCD>MTF-MG
(MTF correction value for main scanning direction)
COPIER>ADJUST>CCD>MTF-SG
(MTF correction value for sub scanning direction)



F-5-77

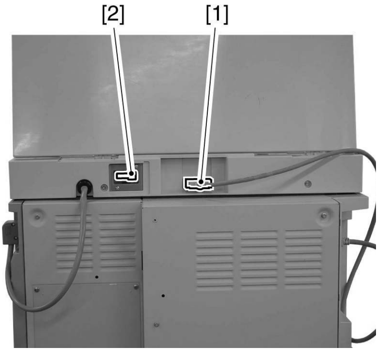
Also, be sure to update the values indicated on the service label attached behind the reader left cover by the values indicated on the CIS label.

Reference:
The machine is not shipped out of the factory with the CIS label attached to it.

5.4.6 Original Cover Sensor

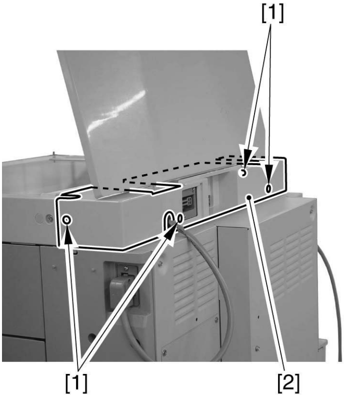
5.4.6.1 Removing the Reader Rear Cover

1) Open the copyboard cover (or the ADF).
2) Disconnect the reader communications cable [1] and the ADF communications cable [2] (if equipped with an ADF).



F-5-78

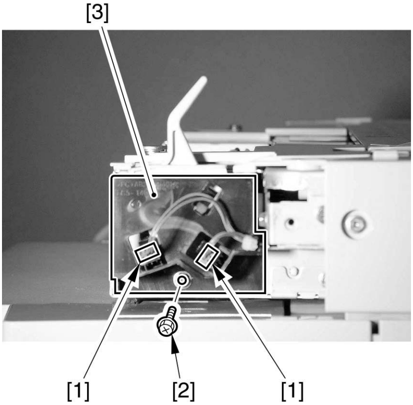
3) Remove the 4 screws [1], and detach the reader rear cover [2].



F-5-79

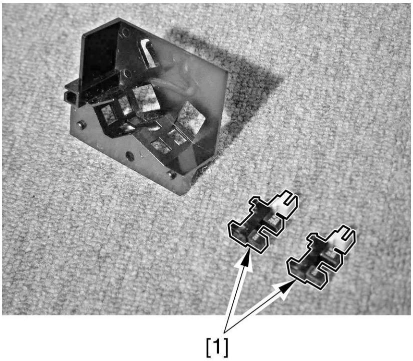
5.4.6.2 Removing the Copyboard Cover Open/Closed Sensor (front/rear)

1) Disconnect the 2 connectors [1], and remove the screw [2]; then, detach the sensor base [3].



F-5-80

2) Detach the 2 sensors [1] from the sensor base.



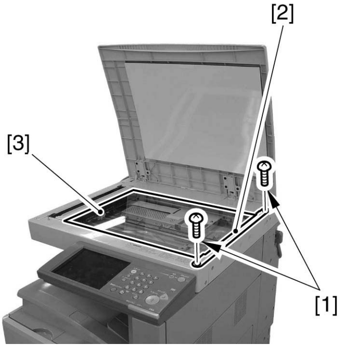
F-5-81

5.4.7 Contact Sensor HP Sensor

5.4.7.1 Removing the Copyboard Glass

1) Open the copyboard cover (or ADF).

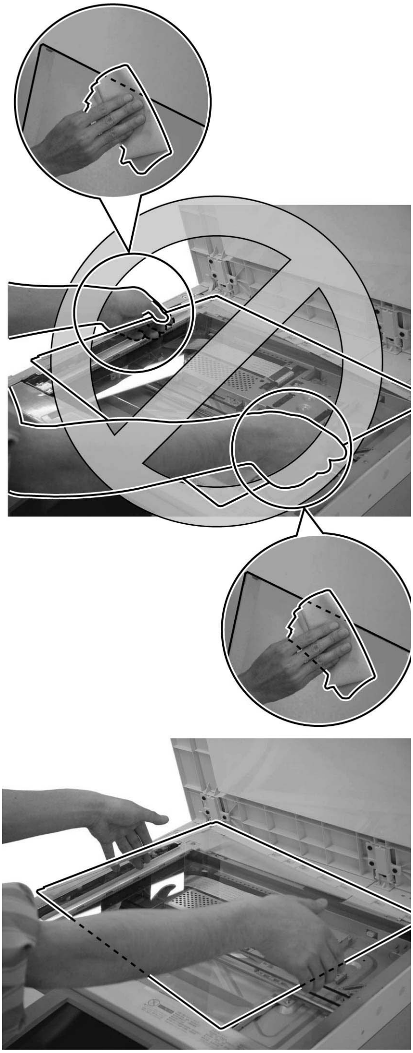
2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].



F-5-82

⚠When removing the copyboard glass, take care not to touch the following:
- glass surface
- standard white plate

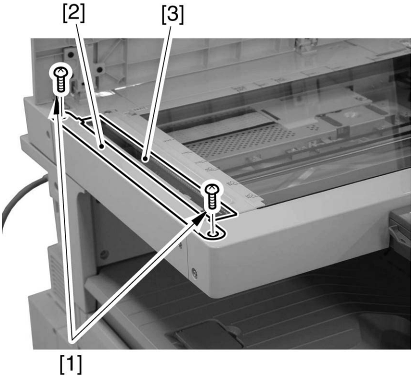
The presence of dirt can cause white/black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.



F-5-83

5.4.7.2 Removing the ADF Reading Glass

1) Open the copyboard glass (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2].
3) Remove the ADF reading glass [3].

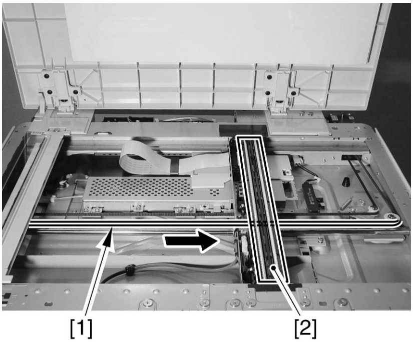


F-5-84

⚠When removing the ADF reading glass, take care not to touch the glass surface.
The presence of dirt can cause white/black lines in the images. If dirt is found, be sure to clean it using lint-free paper moistened with alcohol.

5.4.7.3 Removing the Contract Sensor Home Position Sensor

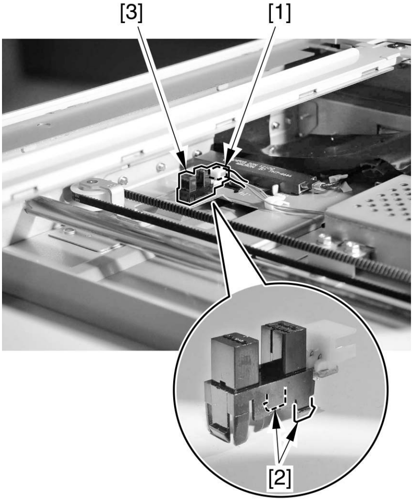
1) Pull the drive belt [1] in the direction of the arrow so that the contact image sensor (CIS) [2] is where indicated in the figure.



F-5-85

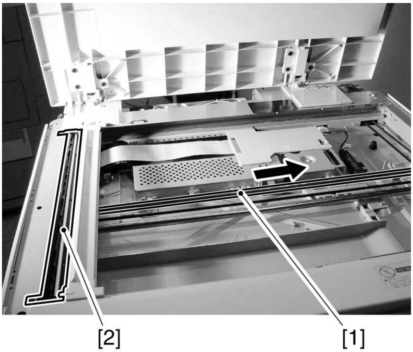
2) Disconnect the connector [1], and remove the CIS home position sensor [3].

⚠When detaching the sensor, do so as if to push it under the claw [2] found at the rear.



F-5-86

⚠After replacing the sensor, pull the drive belt (rear) [1] in the direction of the arrow so that the contact image sensor (CIS) [2] is returned to the farthest left.



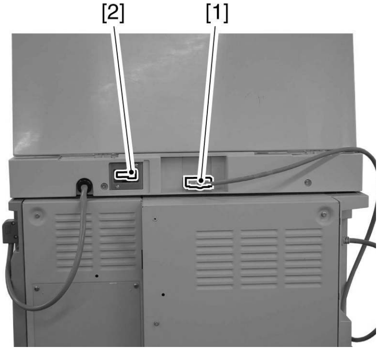
F-5-87

5.4.8 Original Sensor

5.4.8.1 Removing the Reader Rear Cover

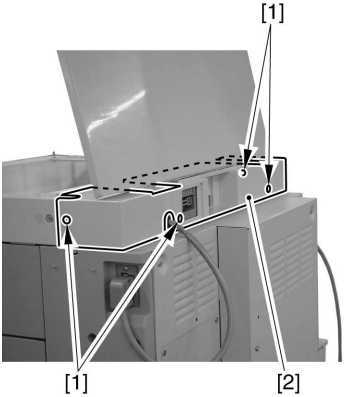
1) Open the copyboard cover (or the ADF).

2) Disconnect the reader communications cable [1] and the ADF communications cable [2] (if equipped with an ADF).



F-5-88

3) Remove the 4 screws [1], and detach the reader rear cover [2].



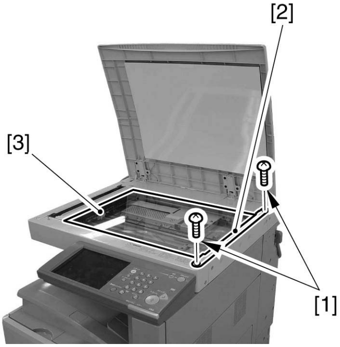
F-5-89

5.4.8.2 Removing the Copyboard Glass

1) Open the copyboard cover (or ADF).

2) Remove the 2 screws [1], and detach the

glass retainer [2]; then, detach the copyboard glass [3].

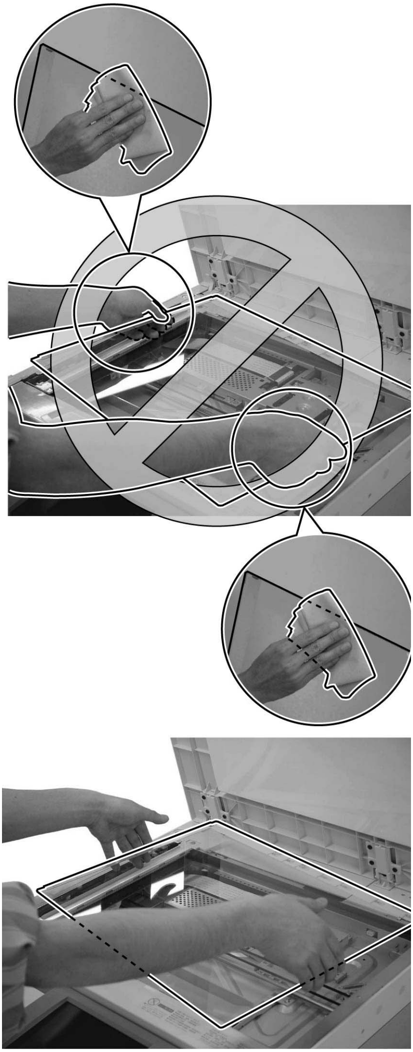


F-5-90

⚠When removing the copyboard glass, take care not to touch the following:

- glass surface
- standard white plate

The presence of dirt can cause white/ black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.

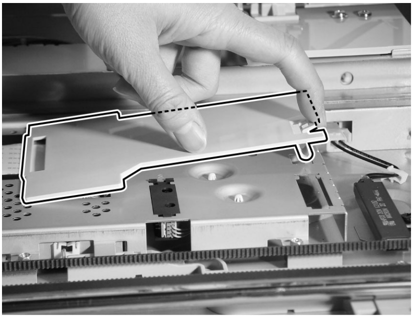


F-5-91

5.4.8.3 Removing the Original Size Sensor

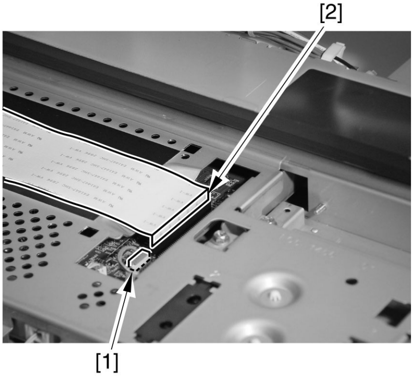
(AB/Inch-configuration)

1) Remove the cover.



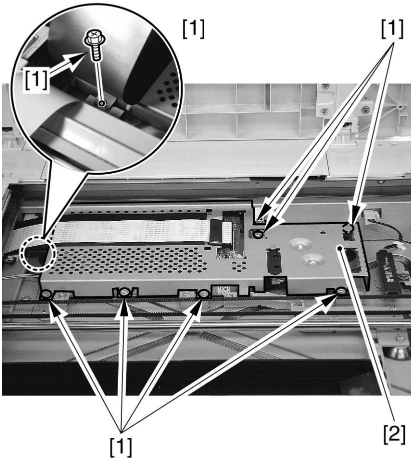
F-5-92

2) Disconnect the connector [1], and detach the flexible cable [2].



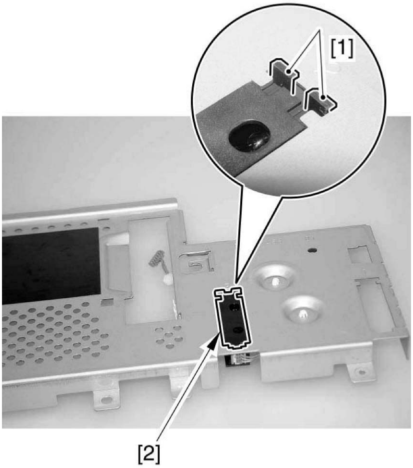
F-5-93

3) Remove the 8 screws [2], and detach the cover [3].



F-5-94

4) Free the hook [1], and detach the original sensor [2].



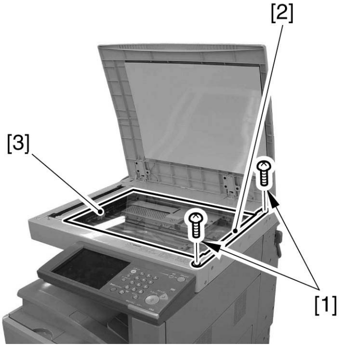
F-5-95

5.4.9 Reader Heater (option)

5.4.9.1 Removing the Copyboard Glass

1) Open the copyboard cover (or ADF).

2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].

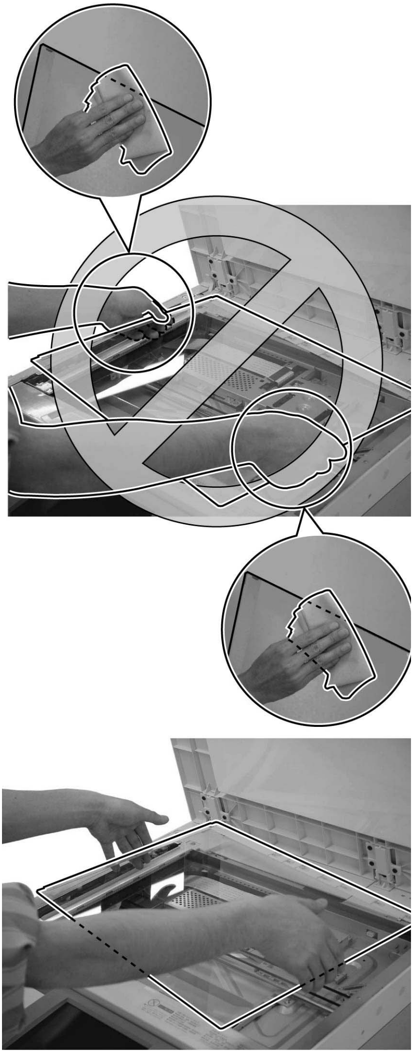


F-5-96

⚠When removing the copyboard glass, take care not to touch the following:

- glass surface
- standard white plate

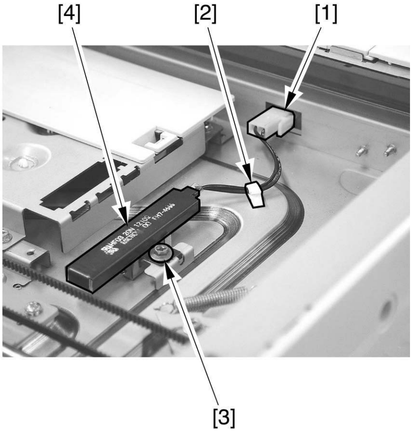
The presence of dirt can cause white/ black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.



F-5-97

5.4.9.2 Removing the Reader Heater (right)

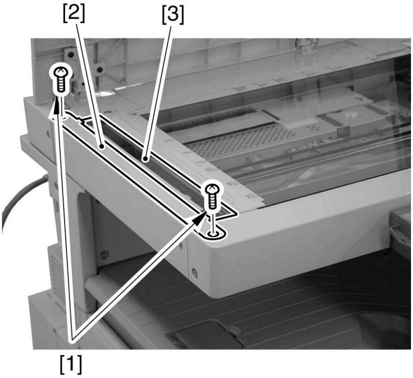
1) Disconnect the connector [1], and free the cable from the wire saddle [2].
2) Remove the screw [3], and detach the reader heater (right) [4].



F-5-98

5.4.9.3 Removing the ADF Reading Glass

1) Open the copyboard glass (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2].
3) Remove the ADF reading glass [3].



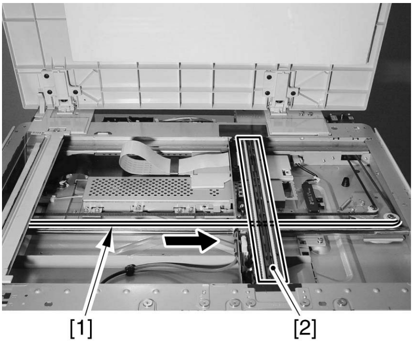
F-5-99

⚠When removing the ADF reading glass, take care not to touch the glass surface.

The presence of dirt can cause white/ black lines in the images. If dirt is found, be sure to clean it using lint-free paper moistened with alcohol.

5.4.9.4 Removing the Reader Heater (left)

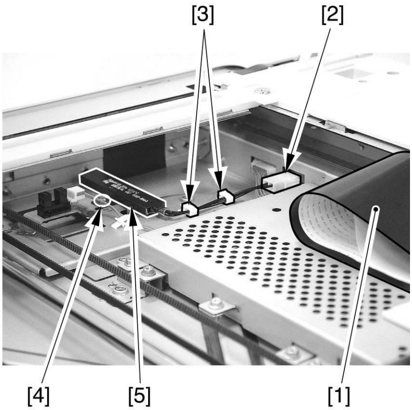
1) Pull the drive belt (front) [1] in the direction of the arrow so that the contact image sensor (CIS) [2] is where it is indicated in the figure.



F-5-100

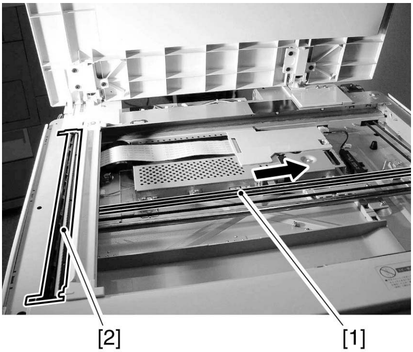
2) Peel the protective sheet [1], and disconnect the connector [2].

3) Free the cable from the wire saddle [3], and remove the screw [4]; then, detach the reader heater (left) [5].



F-5-101

⚠After replacing the sensor, pull the drive belt (rear) [1] in the direction of the arrow so that the contact image sensor is returned to the farthest left.



F-5-102

Chapter 6 Laser Exposure

Contents

6.1 Construction 6-1
  6.1.1 Specifications, Control Mechanisms, and Functions 6-1
  6.1.2 Major Components 6-2
  6.1.3 Construction of the Control System 6-3
6.2 Basic Sequence 6-6
  6.2.1 Basic Sequence of Operations 6-6
6.3 Various Control 6-8
  6.3.1 Controlling the Laser Activation Timing 6-8
    6.3.1.1 Turning On and Off the Laser Unit 6-8
    6.3.1.2 Main Scanning Synchronization Control 6-9
    6.3.1.3 Sub Scanning Direction Write Start Position Control 6-11
  6.3.2 Controlling the Intensity of Laser Light 6-12
    6.3.2.1 APC Control 6-12
    6.3.2.2 PWM Control 6-12
  6.3.3 Controlling the Laser Scanner Motor 6-12
    6.3.3.1 Laser Scanner Motor Control 6-12
  6.3.4 Controlling the Laser Shutter 6-14
    6.3.4.1 Laser Shutter Control 6-14
6.4 Parts Replacement Procedure 6-16
  6.4.1 Laser Scanner Unit 6-16
    6.4.1.1 Removing the Left Cover 6-16
    6.4.1.2 Removing the Left Grip (front) 6-16
    6.4.1.3 Removing the Laser Scanner Unit 6-16
    6.4.1.4 After Replacing the Laser Scanner Unit 6-18
  6.4.2 Dust-Proofing Glass Cleaning Pad 6-18
    6.4.2.1 Removing the Dust-Blocking Glass Cleaning Pad 6-18

6.1 Construction

6.1.1 Specifications, Control Mechanisms, and Functions

T-6-1

Laser Light	
Wave length	785 to 800p nm (infrared)
Output	5 mW
Number of beams	2

T-6-2

Scanner Motor	
Type of motor	DC brushless
Revolution	16000 rpm (approx.)
Type of bearing	Oil

T-6-3

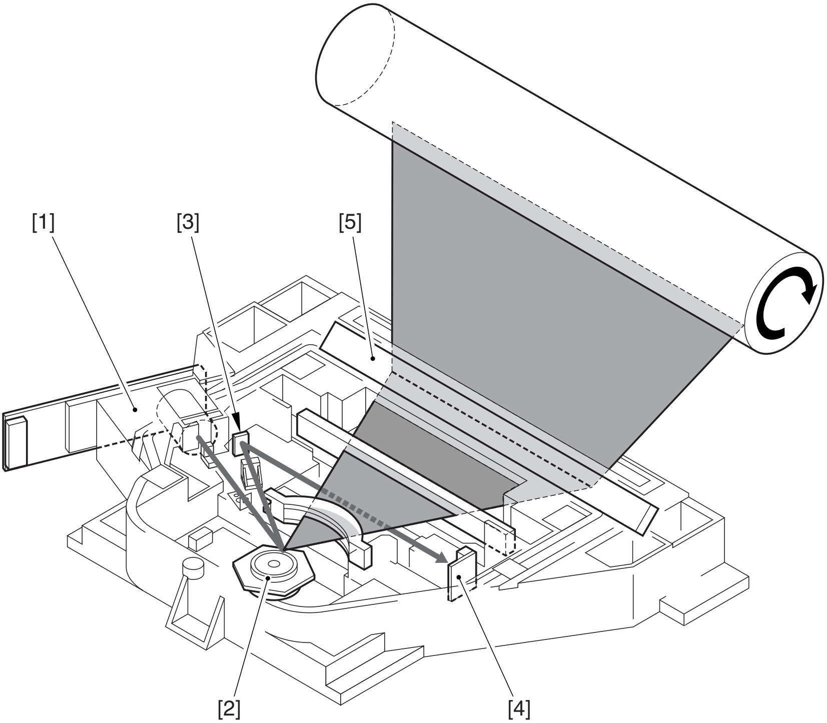
Polygon Mirror	
Number of facets	6

T-6-4

Control Mechanisms	
Synchronization	In main scanning direction In sub scanning direction (write start position)
Intensity control	APC control

Control Mechanisms	
Others	PWM control Laser activation Laser scanner motor control Laser shutter control

6.1.2 Major Components



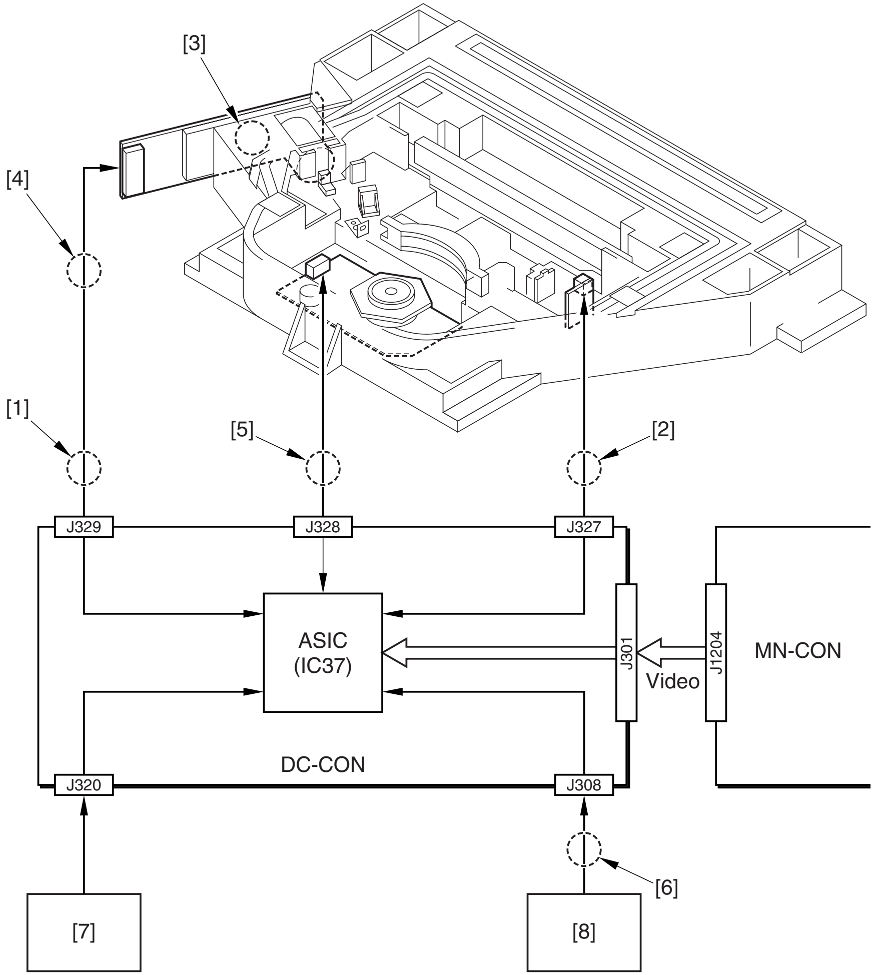
F-6-1

T-6-5

Name	Description
[1] Laser unit	generates laser light.
[2] Polygon mirror	scans the laser beam in main scanning direction.
[3] BD mirror	directs the laser beam in the direction of the BD PCB.
[4] BD PCB	generates the BD signal.
[5] Laser mirror (reflecting mirror)	reflects the laser beam in the direction of the photosensitive drum.

6.1.3 Construction of the Control System

The laser exposure system is primarily controlled by the ASIC (IC37) mounted on the DC controller PCB.


[3]
[4]
[1]
[5]
[2]
J329
J328
J327
ASIC
(IC37)
J301
Video
J1204
MN-CON
DC-CON
J320
J308
[6]
[7]
[8]

F-6-2

[1] Laser activation control

[2] Main scanning synchronization control

[3] APC control

[4] PWM control

[5] Laser scanner motor control

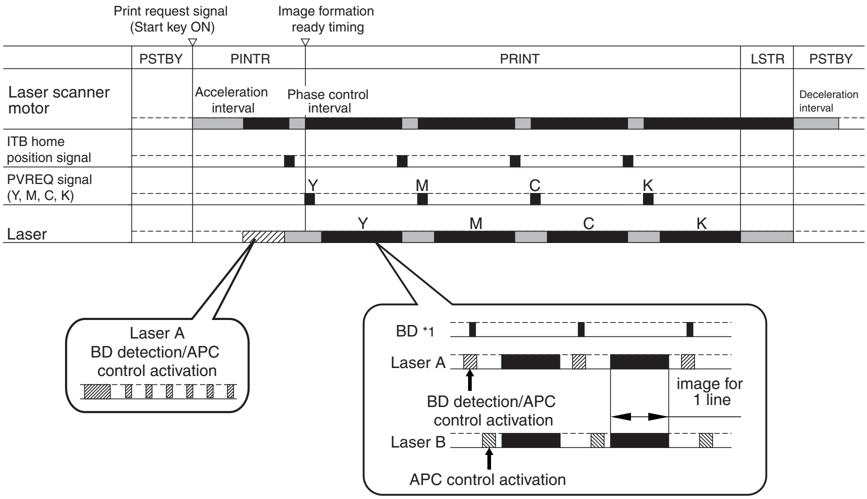
[6] Laser shutter control

[7] Intermediate transfer belt home position sensor
[8] Front cover/right door

6.2 Basic Sequence

6.2.1 Basic Sequence of Operations

The laser scanner motor starts to rotate in response to a press on the Start key (or a print request signal). The machine then turns on the laser unit as soon as the laser scanner motor reaches its target speed of rotation. Thereafter, when the machine becomes ready for the formation of images, the printer unit generates the image request signals for individual colors (PVREQ-Y, -M, -C, -K), and the machine turns on the laser units of the individual colors according to these signals.


Print request signal
(Start key ON)
Image formation
ready timing
PSTBY
PINTR
PRINT
LSTR
PSTBY
Laser scanner motor
Acceleration interval
Phase control interval
Deceleration interval
ITB home position signal
PVREQ signal (Y, M, C, K)
Y
M
C
K
Laser
Y
M
C
K
Laser A
BD detection/APC control activation
BD *1
Laser A
BD detection/APC control activation
image for 1 line
Laser B
APC control activation

*1:The BD signal is generated with reference to the laser light;
the BD sensor of the BD PCB receives light from laser B only, not receiving light from laser B.

F-6-3

The timing at which the machine generates the PVREQ signal differs according to print mode/process speed.

- Mono/Normal Speed

The machine generates the PVREQ signal as specified as soon as it becomes ready for the formation of images regardless of the ITB home position signal (ITB HP signal).

- Full Color/Normal Speed

  The machine generates the PVREQ signal of individual colors with reference to the ITB HP signal so that the write start position in sub scanning direction is correct for the image to be drawn on the intermediate transfer belt.

- Full Color/Normal Speed

  The machine generates the PVREQ signal of individual colors with reference to the ITB HP signal so that the write start position in sub scanning direction is correct for the image to be drawn on the intermediate transfer belt.

6.3 Various Control

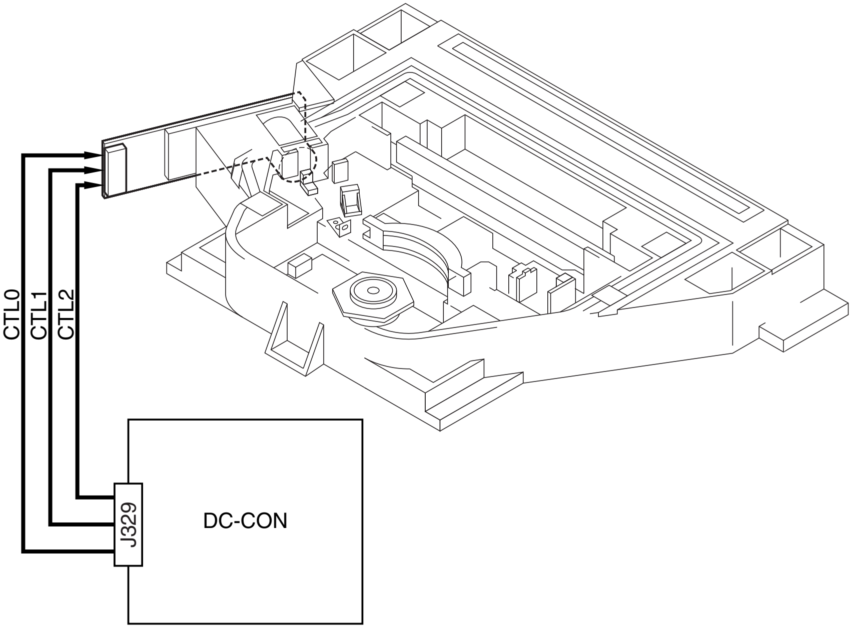
6.3.1 Controlling the Laser Activation Timing

6.3.1.1 Turning On and Off the Laser Unit

The laser unit is turned on and off based on combinations of laser control signals (CTL0, 1, 2) coming from the DC controller PCB.

T-6-6

Laser control signal			**Laser status**	
CTL2	**CTL1**	**CTL0**	**Laser A**	**Laser B**
0	0	0	OFF	OFF
1	1	1	video signal input enable	video signal input enable
1	1	0	ON (all ON; for factory)	OFF (all OFF; bias current application)
1	0	1	OFF (all OFF; bias current application)	ON (all ON; for factory)
1	0	0	ON (all ON; for factory)	ON (all ON; for factory)
0	1	0	ON (for APC)	OFF (all OFF; bias current application)
0	0	1	OFF (all OFF; bias current application)	ON (for APC control)
0	1	1	OFF (all OFF; bias current application)	OFF (all OFF; bias current application)



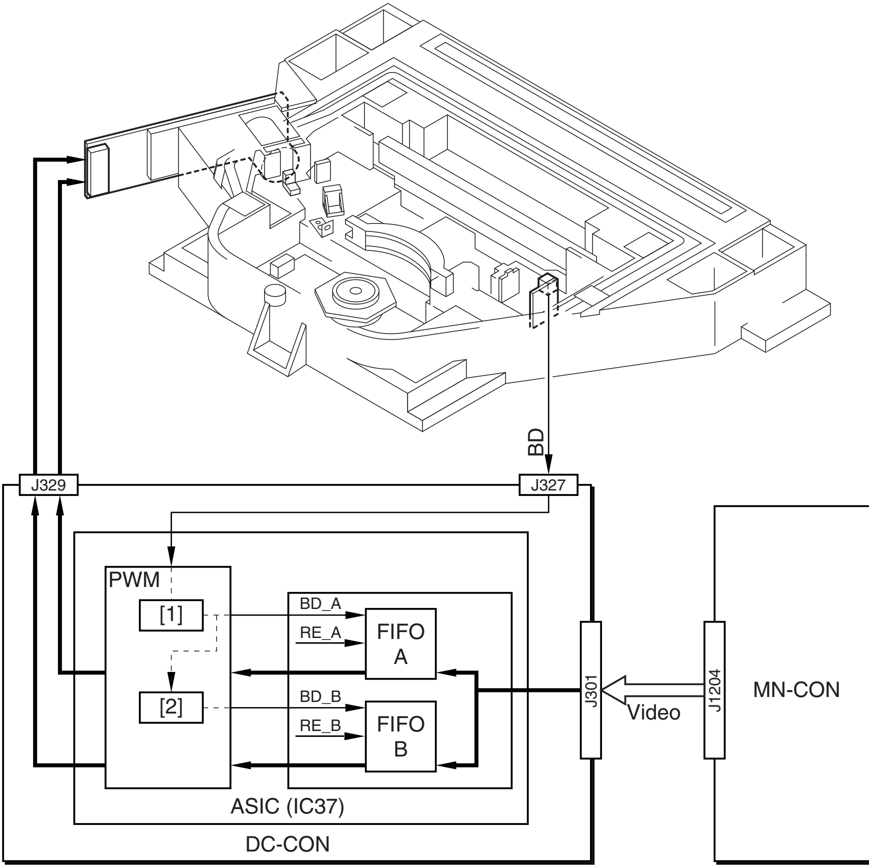
F-6-4

6.3.1.2 Main Scanning Synchronization Control

The synchronization in main scanning direction is performed with reference to the BD sync signal.

The BD sync signal may be the BD sync signal for laser A or for laser B, generated by the DC controller PCB based on the BD signal generated by the BD PCB after detecting the light from laser A.

The image data written to line memory (FIFO A, FIFO B) is read using the read enable signal (RE_A, RE_B) generated from the BD sync signal (BD_A, BD_B); then, the data is modulated to PWM data and forwarded to the laser driver PCB.


BD
J329
J327
PWM
[1]
[2]
BD_A
RE_A
FIFO A
BD_B
RE_B
FIFO B
ASIC (IC37)
DC-CON
J301
Video
J1204
MN-CON

F-6-5

[1] Sync circuit

[2] Delay circuit

FIFO A/B: line memory

BD_A/B: BD sync signal

RE_A/B: read enable signal

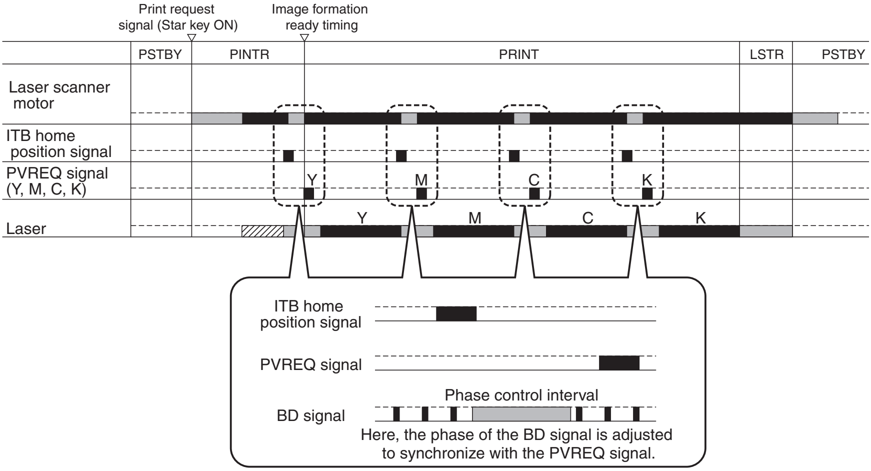
Memo

Generation of the BD Signal

The BD sensor mounted on the BD PCB receives the light from the laser A only, not receiving the light from laser B; the BD signal is generated based on the light of laser A.

6.3.1.3 Sub Scanning Direction Write Start Position Control

In full-color mode, the write start position in sub scanning direction is controlled so that the colors of the images to be drawn on the intermediate transfer belt will be correctly matched. The speed of rotation of the laser scanner motor is fine-tuned, thereby synchronizing the phase of the BD signal with the PVREQ signal (image request signal) to synchronize the write start position of each color in sub scanning direction.
This control mechanism is executed between when the ITB HP signal is detected and when the PVREQ signal is transmitted.


Print request signal (Star key ON)
Image formation ready timing
PSTBY
PINTR
PRINT
LSTR
PSTBY
Laser scanner motor
ITB home position signal
PVREQ signal (Y, M, C, K)
Laser
Y
M
C
K
Y
M
C
K
ITB home position signal
PVREQ signal
BD signal
Phase control interval
Here, the phase of the BD signal is adjusted to synchronize with the PVREQ signal.

F-6-6

E100 (BD detection error)
-0001 when the laser scanner motor is starting up, the speed lock signal is not detected within a specific period of time.
-0002 while the laser scanner motor is rotating at a stable speed, the speed lock signal

cannot be detected.

-0003 while the laser scanner motor is rotating at a stable speed, the phase lock signal cannot be detected.

-0004 while the laser scanner motor is starting up, the phase lock signal is not detected within a specific period of time.

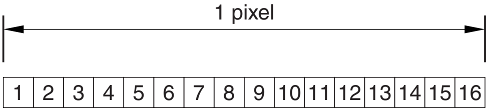
6.3.2 Controlling the Intensity of Laser Light

6.3.2.1 APC Control

The machine monitors the laser light arriving at the photodiode of the laser driver PCB so as to make sure that the intensity of the light is always appropriate.

6.3.2.2 PWM Control

A single pixel is divided by 16, and the laser unit is activated in any of 16 settings to suit the image data (PWM data) in question.



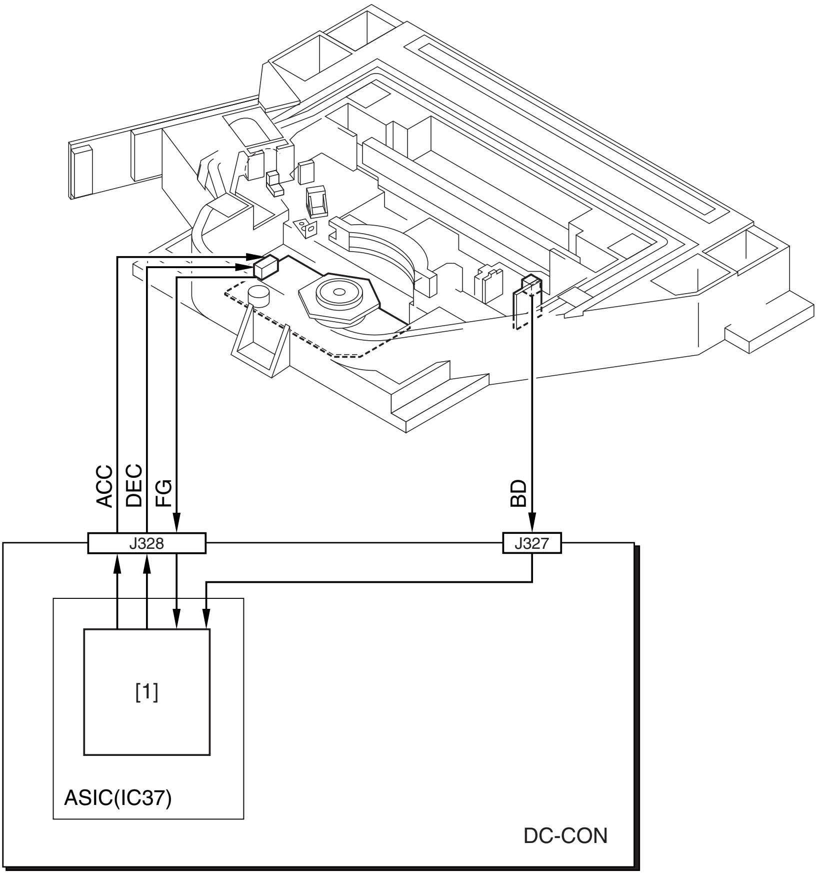
F-6-7

6.3.3 Controlling the Laser Scanner Motor

6.3.3.1 Laser Scanner Motor Control

The machine controls the speed of rotation of the laser scanner motor with reference to the laser scanner motor rotation speed signal (FG signal) from when the motor starts up until it reaches a specific speed of rotation. When it reaches a specific speed of rotation, the machine refers to the BD signal to control the speed so that the BD cycle and the laser scanner motor rotation cycle are of the same phase.

The speed of rotation of the laser scanner motor is controlled by means of the acceleration signal (ACC signal) and the deceleration signal (DEC signal).



F-6-8

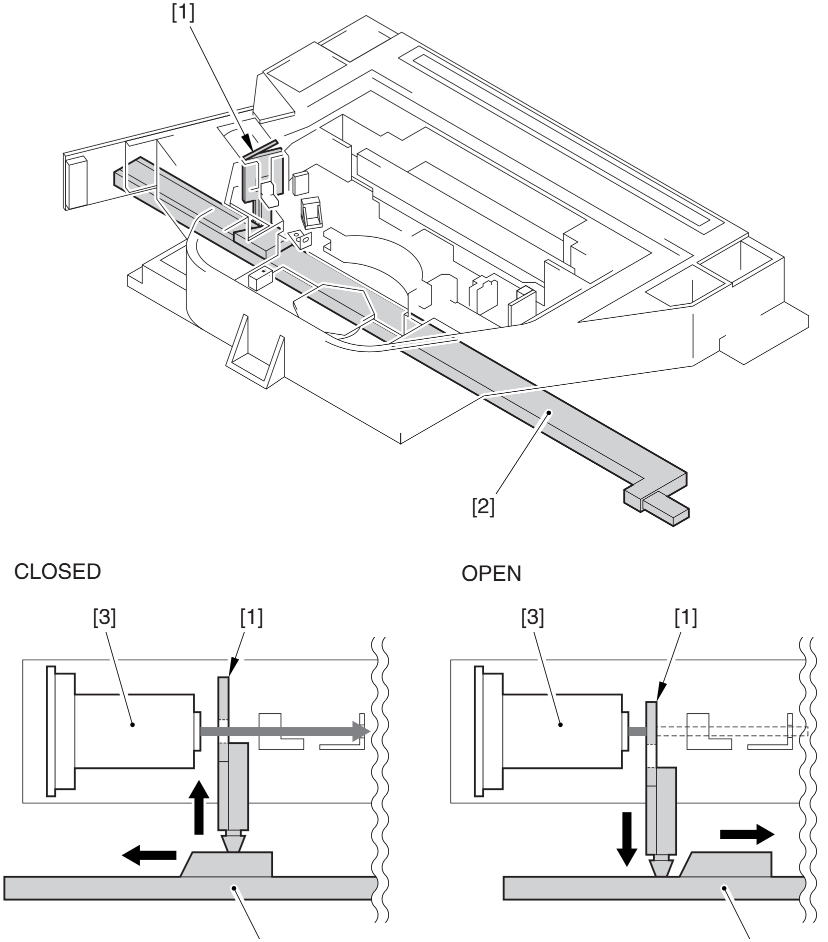
[1] Motor control block

E110 (laser scanner motor error)
-0001 while the laser scanner motor is starting up, it fails to reach a specific target speed within a specific period of time.

6.3.4 Controlling the Laser Shutter

6.3.4.1 Laser Shutter Control

When the front cover is opened, the laser shutter link operating in conjunction with the front cover lifts the laser shutter, which in turn blocks the optical path of the laser light.
The machine turns off the laser scanner motor and the laser output as soon as it detects that the front cover or the right door has been opened.


[1]
[2]
CLOSED
[3]
[1]
[2]
OPEN
[3]
[1]
[2]

F-6-9

Laser Shutter Control

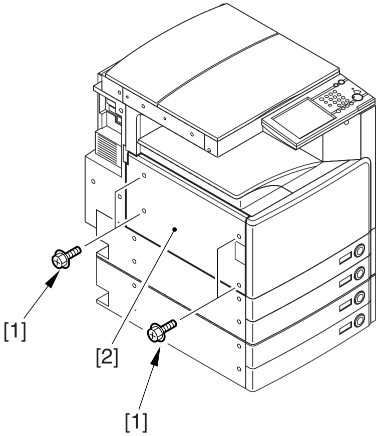
1. Laser shutter
2. Laser shutter link (operates in conjunction with front cover)
3. Laser unit

6.4 Parts Replacement Procedure

6.4.1 Laser Scanner Unit

6.4.1.1 Removing the Left Cover

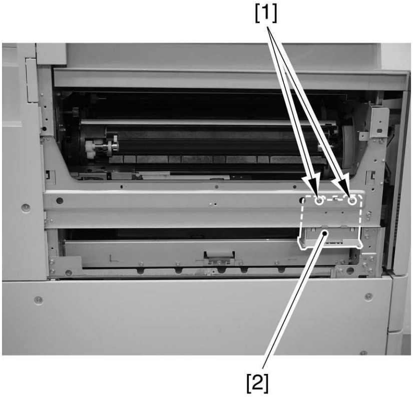
1) Remove the 4 screws [1], and detach the left cover [2].



F-6-10

6.4.1.2 Removing the Left Grip (front)

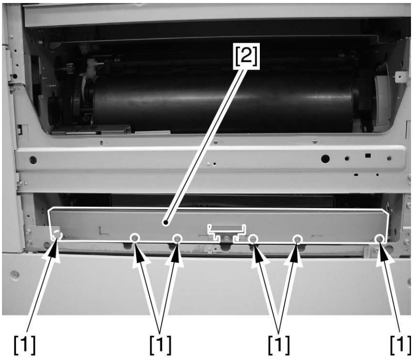
1) Remove the 2 screws [1], and detach the left grip (front) [2].



F-6-11

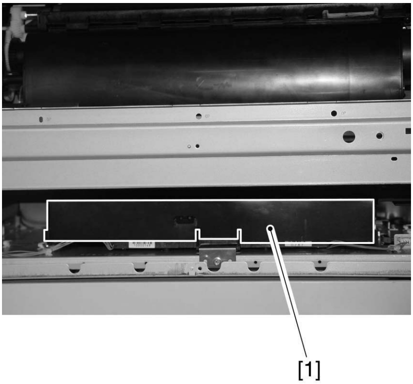
6.4.1.3 Removing the Laser Scanner Unit

1) Remove the 6 screws [1], and detach the anti-vibration plate [2].



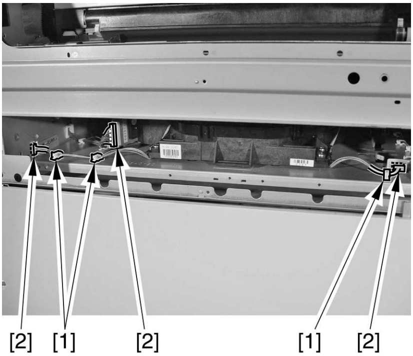
F-6-12

2) Pull out the dust-blocking sheet [1] to the front to detach.



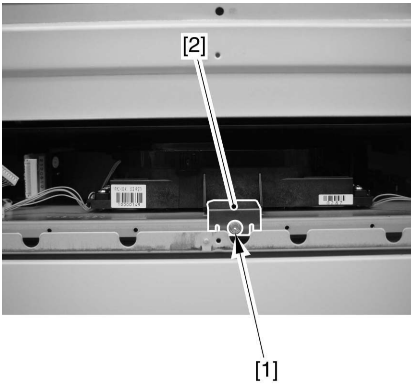
F-6-13

3) Free the cable from the 3 cable clamps [1], and disconnect the 3 connectors [2].



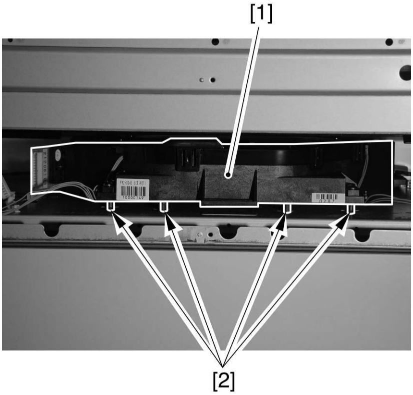
F-6-14

4) Remove the screw [1], and detach the laser scanner unit fixing plate [2].



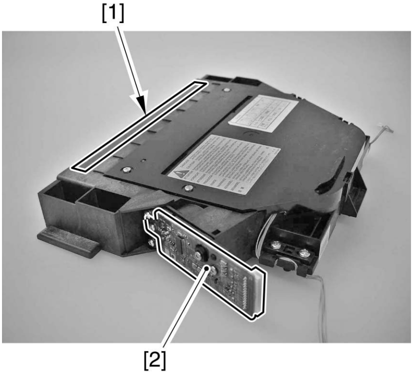
F-6-15

5) Lift the laser scanner unit [1], and free the 4 bosses [2]; then, pull it to the front to detach.



F-6-16

⚠Take care not to touch the element on the laser drive PCB [2] or the dust-blocking glass [1] (laser exposure area) of the laser scanner unit. Also, take care not to hit the laser drive PCB [2] against the machine.



F-6-17

6.4.1.4 After Replacing the Laser Scanner Unit

Enter the values indicated on the label attached to the laser scanner unit using the following service mode item:

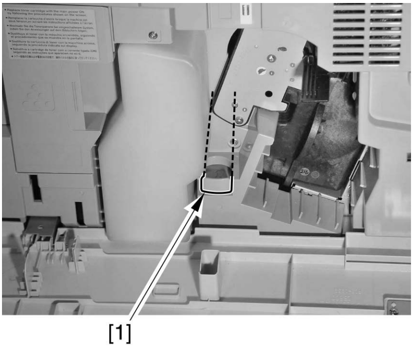
- COPIER>ADJUST>LASER>LA-DELAY

6.4.2 Dust-Proofing Glass Cleaning Pad

6.4.2.1 Removing the Dust-Blocking Glass Cleaning Pad

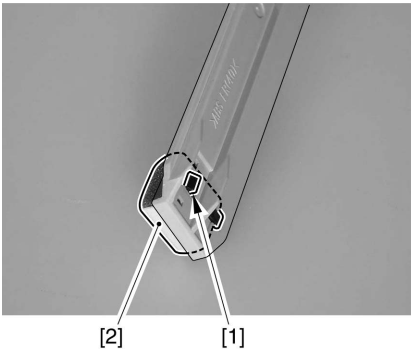
1) Open the front cover.

2) Pull out the dust-blocking glass cleaning tool [1] to the front to detach.



F-6-18

3) Free the claw [1], and detach the dust-blocking glass cleaning pad [2].



F-6-19

Chapter 7

Image Formation

Contents

7.1 Construction 7-1

7.1.1 Specifications of the Image Formation System 7-1

7.1.2 Major Components of the Image Formation System 7-4

7.1.3 Specifications of the Charging System 7-5

7.2 Image Formation Process 7-8

7.2.1 Image Formation Process (outline) 7-8

7.2.2 Image Formation Process (image formation)....................................7-10

7.2.3 2-Side Placement Control 7-11

7.3 Basic Sequence..7-13

7.3.1 Power-On 7-13

7.3.2 Copying/Printing (normal speed) 7-15

7.3.3 Copying/Printing (half-speed)..7-16

7.3.4 Copying/Printing a Mix of Color and Black-and-White Originals ...7-17

7.4 Image Stabilization Control 7-18

7.4.1 Outline of Image Stabilization Control 7-18

7.4.2 Timing of Image Stabilization Control 7-19

7.4.3 ATR Control...7-22

7.4.4 Drum Film Thickness Detection Control...7-26

7.4.5 Development Contrast Control 7-26

7.4.6 ATVC Control..7-27

7.4.7 PASCAL Control (image gradation density correction)...................7-29

7.4.8 Development Gradation Density Correction Control 7-30

7.4.9 Auto Gradation Correction Function 7-31

7.5 Drum Unit 7-32

7.5.1 Drum Unit 7-32

7.5.1.1 Construction of the Drum Unit 7-32

7.5.1.2 Charging Bias Control..7-33

7.5.1.3 Drum Cleaning 7-34

7.5.1.4 Drum Unit Drive Path 7-36

7.6 Developing Rotary 7-37

7.6.1 Construction of the Developing Rotary 7-37

7.6.2 Developing Rotary Control..7-38

7.6.3 Developing Assembly Drive Path 7-41
7.7 Developing Unit 7-43
  7.7.1 Construction of the Developing Unit 7-43
  7.7.2 ACR Control (Auto Carrier Refresh control) 7-45
  7.7.3 Developing Bias Control 7-48
7.8 Toner Container 7-50
  7.8.1 Construction of the Toner Cartridge 7-50
  7.8.2 Toner Level Detection Control 7-51
  7.8.3 Toner Supply Control 7-53
7.9 Transfer Device 7-56
  7.9.1 Construction of the Transfer Assembly 7-56
  7.9.2 ITB Home Position Detection Control 7-57
  7.9.3 Transfer Bias Control 7-60
  7.9.4 Cleaning the Intermediate Transfer Belt (ITB) 7-62
  7.9.5 Cleaning the Secondary Transfer Outside Roller 7-63
  7.9.6 ITB Waste Toner Collection Mechanism 7-64
  7.9.7 Transfer Assembly Drive Path 7-65
  7.9.8 Transfer Assembly Swing Control 7-66
  7.9.9 Separation 7-69
7.10 Parts Replacement Procedure 7-70
  7.10.1 Drum Unit 7-70
    7.10.1.1 Removing the Drum Unit 7-70
    7.10.1.2 Points to Note When Mounting the Drum Unit 7-73
    7.10.1.3 After Replacing the Drum Unit 7-74
  7.10.2 Development Unit 7-75
    7.10.2.1 Finisher-P1 in Use 7-75
    7.10.2.2 Removing the Delivery Tray 7-76
    7.10.2.3 Removing the Delivery Tray Lower Cover 7-76
    7.10.2.4 Removing the ITB Waste Toner Unit 7-77
    7.10.2.5 Removing the Developing Unit 7-77
    7.10.2.6 Points to Keep in Mind When Fitting the Developing Unit 7-81
    7.10.2.7 After Replacing the Developing Unit (Y, M, C) 7-82
    7.10.2.8 After Replacing the Developing Unit (Bk) 7-82
  7.10.3 Rotary Upper Cover 7-83
    7.10.3.1 Removing the Drum Unit 7-83
    7.10.3.2 Removing the Rotary Upper Cover 7-85

7.10.3.3 Points to Note When Mounting the Drum Unit 7-86
7.10.4 Rotary Lower Cover 7-87
7.10.4.1 Removing the Left Cover 7-87
7.10.4.2 Removing the Left Grip (front) 7-87
7.10.4.3 Removing the Rotary Lower Cover 7-87
7.10.5 ITB Cleaning Unit 7-88
7.10.5.1 Preparing for the Removal of the ITB Cleaning Unit 7-88
7.10.5.2 Removing the Delivery Tray 7-88
7.10.5.3 Removing the Delivery Tray Lower Cover 7-89
7.10.5.4 Removing the ITB Waste Toner Unit 7-89
7.10.5.5 Removing the ITB Cleaning Unit 7-90
7.10.5.6 Points to Note When Mounting the ITB Cleaning Unit 7-92
7.10.6 ITB Waste Toner Unit 7-94
7.10.6.1 Removing the ITB Waste Toner Unit 7-94
7.10.7 Intermediate Transfer Unit 7-94
7.10.7.1 Removing the Drum Unit 7-94
7.10.7.2 Removing the Delivery Tray 7-96
7.10.7.3 Removing the Delivery Tray Lower Cover 7-97
7.10.7.4 Removing the waste toner unit retainer 7-97
7.10.7.5 Removing the protective plate 7-98
7.10.7.6 Removing the Right Cover (upper rear) 7-98
7.10.7.7 Removing the Right Door 7-99
7.10.7.8 Removing the Fixing Unit 7-100
7.10.7.9 Removing the Fixing Release Arm Plate 7-102
7.10.7.10 Removing the Intermediate Transfer Unit (ITB unit) 7-102
7.10.7.11 Points to Note When Mounting the ITB Unit 7-105
7.10.7.12 Points to Note When Mounting the Drum Unit 7-107
7.10.7.13 After Replacing the Intermediate Transfer Unit 7-108
7.10.8 ITB Waste Toner Detection Unit 7-108
7.10.8.1 Removing the Delivery Tray 7-108
7.10.8.2 Removing the Delivery Tray Lower Cover 7-109
7.10.8.3 Removing the ITB Waste Toner Detection Unit 7-109
7.10.9 Intermediate Transfer Belt 7-110
7.10.9.1 Removing the Drum Unit 7-110
7.10.9.2 Removing the Delivery Tray 7-113
7.10.9.3 Removing the Delivery Tray Lower Cover 7-113

7.10.9.4 Removing the waste toner unit retainer 7-114
7.10.9.5 Removing the protective plate 7-114
7.10.9.6 Removing the Right Cover (upper rear) 7-115
7.10.9.7 Removing the Right Door.. 7-115
7.10.9.8 Removing the Fixing Unit 7-117
7.10.9.9 Removing the Fixing Release Arm Plate.............................. 7-118
7.10.9.10 Removing Intermediate Transfer Unit (ITB unit)............... 7-118
7.10.9.11 Removing the Intermediate Transfer Belt (ITB) 7-121
7.10.9.12 Points to Note When Mounting the ITB 7-125
7.10.9.13 Points to Note When Mounting the ITB Unit...................... 7-127
7.10.9.14 Points to Note When Mounting the Drum Unit................... 7-129
7.10.9.15 After Replacing the Intermediate Transfer Belt.................. 7-130
7.10.10 ITB Home Position Sensor PCB... 7-130
7.10.10.1 Removing the Drum Unit.. 7-130
7.10.10.2 Removing the Delivery Tray 7-132
7.10.10.3 Removing the Delivery Tray Lower Cover 7-133
7.10.10.4 Removing the waste toner unit retainer 7-133
7.10.10.5 Removing the protective plate 7-134
7.10.10.6 Removing the Right Cover (upper rear) 7-134
7.10.10.7 Removing the Right Door.. 7-135
7.10.10.8 Removing the Fixing Unit 7-136
7.10.10.9 Removing the Fixing Release Arm Plate............................ 7-138
7.10.10.10 Removing the Intermediate Toner Unit (ITB unit)........... 7-138
7.10.10.11 Removing the Intermediate Transfer Belt (ITB) 7-141
7.10.10.12 Removing the ITB Home Position Sensor PCB 7-144
7.10.10.13 Points to Note When Mounting the ITB 7-145
7.10.10.14 Points to Note When Mounting the ITB Unit.................... 7-147
7.10.10.15 Points to Note When Mounting the Drum Unit................. 7-149
7.10.11 Primary Transfer Roller 7-150
7.10.11.1 Removing the Drum Unit.. 7-150
7.10.11.2 Removing the Delivery Tray 7-152
7.10.11.3 Removing the Delivery Tray Lower Cover 7-153
7.10.11.4 Removing the waste toner unit retainer 7-153
7.10.11.5 Removing the protective plate 7-154
7.10.11.6 Removing the Right Cover (upper rear) 7-154
7.10.11.7 Removing the Right Door.. 7-155

7.10.11.8 Removing the Fixing Unit....7-156
7.10.11.9 Removing the Fixing Release Arm Plate....7-158
7.10.11.10 Removing the Intermediate Transfer Unit (ITB unit)....7-158
7.10.11.11 Removing the Intermediate Transfer Belt (ITB)....7-161
7.10.11.12 Removing the Primary Transfer Roller....7-165
7.10.11.13 Points to Note When Mounting the ITB....7-165
7.10.11.14 Points to Note When Mounting the ITB Unit....7-167
7.10.11.15 Points to Note When Mounting the Drum Unit....7-169
7.10.11.16 After Replacing the Primary Transfer Roller....7-170
7.10.12 Secondary Transfer External Roller....7-170
7.10.12.1 Removing the Separation Static Eliminator....7-170
7.10.12.2 Removing the Secondary Transfer Outside Roller....7-171
7.10.12.3 Points to Note When Mounting the Secondary Transfer Outside Roller....7-171
7.10.12.4 After Replacing the Secondary Transfer Outside Roller....7-173
7.10.13 Secondary Transfer Internal Roller....7-174
7.10.13.1 Removing the Drum Unit....7-174
7.10.13.2 Removing the Delivery Tray....7-176
7.10.13.3 Removing the Delivery Tray Lower Cover....7-177
7.10.13.4 Removing the waste toner unit retainer....7-177
7.10.13.5 Removing the protective plate....7-178
7.10.13.6 Removing the Right Cover (upper rear)....7-178
7.10.13.7 Removing the Right Door....7-179
7.10.13.8 Removing the Fixing Unit....7-180
7.10.13.9 Removing the Fixing Release Arm Plate....7-182
7.10.13.10 Removing the Intermediate Transfer Unit (ITB unit)....7-182
7.10.13.11 Removing the Intermediate Transfer Belt (ITB)....7-185
7.10.13.12 Removing the Secondary Transfer Inside Roller....7-189
7.10.13.13 Points to Note When Mounting the ITB....7-190
7.10.13.14 Points to Note When Mounting the ITB Unit....7-192
7.10.13.15 Points to Note When Mounting the Drum Unit....7-194
7.10.14 ITB Cleaning Blade....7-195
7.10.14.1 Preparing for the Removal of the ITB Cleaning Unit....7-195
7.10.14.2 Removing the Delivery Tray....7-196
7.10.14.3 Removing the Delivery Tray Lower Cover....7-196
7.10.14.4 Removing the ITB Waste Toner Unit....7-197

  - 7.10.14.5 Removing the ITB Cleaning Unit 7-197
  - 7.10.14.6 Removing the ITB Cleaning Blade 7-199
  - 7.10.14.7 Point to Note When Replacing the ITB Cleaning Blade 7-200
  - 7.10.14.8 Points to Note When Mounting the ITB Cleaning Unit 7-201
- 7.10.15 ITB Fan 7-203
  - 7.10.15.1 Removing the Delivery Tray 7-203
  - 7.10.15.2 Removing the Delivery Tray Lower Cover 7-204
  - 7.10.15.3 Removing the ITB Cleaning Fan 7-204
- 7.10.16 Separator Eliminator 7-205
  - 7.10.16.1 Removing the Separation Static Eliminator 7-205
- 7.10.17 ATR Sensor Unit 7-206
  - 7.10.17.1 Removing the Left Cover 7-206
  - 7.10.17.2 Removing the Delivery Tray 7-206
  - 7.10.17.3 Removing the Delivery Tray Lower Cover 7-207
  - 7.10.17.4 Removing ATR Sensor Unit 7-207
- 7.10.18 Environment Sensor PCB 7-209
  - 7.10.18.1 Removing the Drum Unit 7-209
  - 7.10.18.2 Removing the Right Cover (upper rear) 7-211
  - 7.10.18.3 Removing the Right Door 7-212
  - 7.10.18.4 Removing the Fixing Assembly Release Arm Plate 7-213
  - 7.10.18.5 Removing the Fixing Unit 7-213
  - 7.10.18.6 Removing the Patch Image Read Sensor 7-215
  - 7.10.18.7 Removing the Environment Sensor PCB 7-216
  - 7.10.18.8 Points to Note When Mounting the Drum Unit 7-217
- 7.10.19 Patch Image Sensor 7-217
  - 7.10.19.1 Removing the Drum Unit 7-217
  - 7.10.19.2 Removing the Right Cover (upper rear) 7-220
  - 7.10.19.3 Removing the Right Door 7-220
  - 7.10.19.4 Removing the Fixing Assembly Release Arm Plate 7-222
  - 7.10.19.5 Removing the Fixing Unit 7-222
  - 7.10.19.6 Removing the Patch Image Read Sensor 7-224
  - 7.10.19.7 Points to Note When Mounting the Drum Unit 7-225

7.1 Construction

7.1.1 Specifications of the Image Formation System

T-7-1

Drum Unit		
	Photosensitive drum	
	Drum type	OPC
	Drum diameter	62 mm
	Cleaning mechanism	cleaning blade brush roller
	process speed	137 mm/sec
	Primary charging assembly	
	Charging method	roller charging
	Charging roller diameter	14 mm
	Cleaning mechanism	none

T-7-2

Developing Unit		
	Developing cylinder diameter	20 mm
	Development method	dry, 2-component
	Toner	non-magnetic negative (S toner)
	Toner level detection (to ensure a specific level)	video count data, patch image density measurement

Developing Unit		
	Starter	comes filled

T-7-3

Toner Cartridge		
	Toner level detection	
	Toner detection	path image density measurement
	Toner level indication	toner supply amount (video count data, patch image density measurement)
	Toner amount	Y: 170 g
		M: 170 g
		C: 170 g
		Bk: 635 g
		(including about 95 g of carrier)

T-7-4

Intermediate transfer assembly		
	Construction	intermediate transfer belt (ITB)
		(ITB)
	Drive method	from drum/ITB motor through gears
	Feed speed	
	Plain paper	137 mm/sec
	Thick paper, postcard, transparency*1	68.5 mm/sec

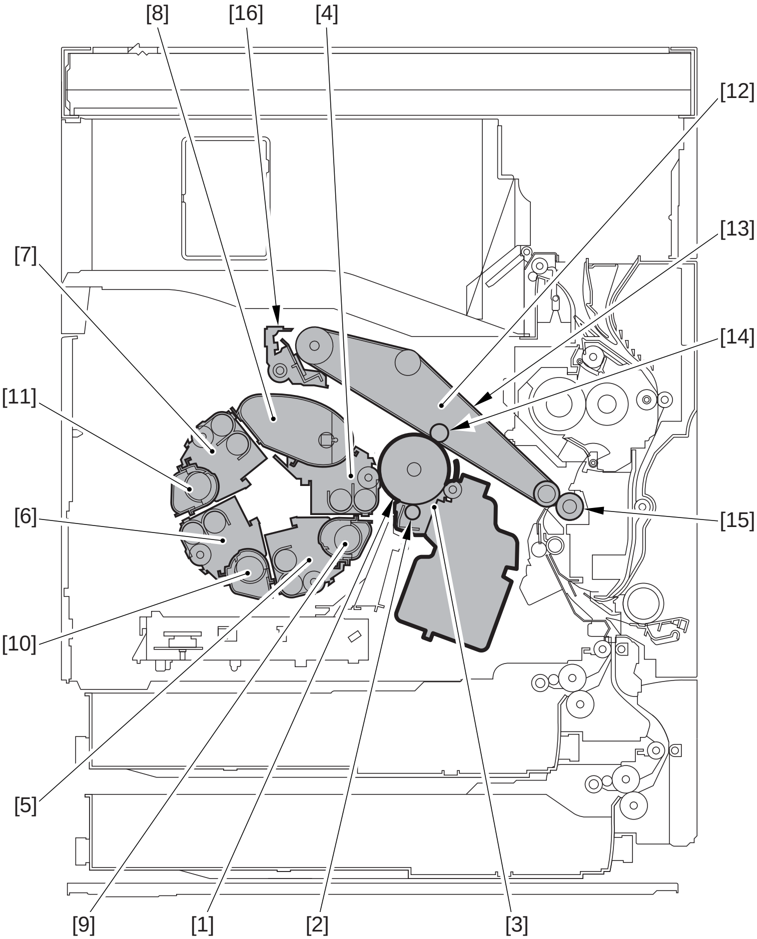
Intermediate transfer assembly		
	Cleaning mechanism	Cleaning blade

*1: in the case of full color mode, 68.5 mm/sec; of mono color mode, 137 mm/sec.

T-7-5

Image stabilization control		
	ATR control	corrects toner density (supply amount)
	Drum film thickness detection control	corrects development contrast
	Development contrast control	determines appropriate primary charging DC bias and developing DC bias
	ATVC control	ensures good transfer
	PASCAL control	corrects image gradation density characteristics
	development gradation density correction control	corrects development gradation density characteristics

7.1.2 Major Components of the Image Formation System


[8]
[16]
[4]
[12]
[13]
[7]
[14]
[11]
[6]
[15]
[10]
[5]
[9]
[1]
[2]
[3]

F-7-1

[1] Photosensitive drum

[2] Primary charging roller

[3] Drum unit

[4] Developing unit (Bk)

[5] Developing unit (Y)

[6] Developing unit (M)
[7] Developing unit (C)
[8] Toner cartridge (Bk)
[9] Toner cartridge (Y)
[10]Toner cartridge (M)
[11]Toner cartridge (C)
[12]Intermediate transfer unit (ITB unit)
[13]Intermediate transfer belt (ITB)
[14]Primary transfer roller
[15]Secondary transfer outside roller
[16]ITB cleaning unit

7.1.3 Specifications of the Charging System

T-7-6

Primary charging bias	
Charging method	roller charging
Charging target	photosensitive drum
AC component use range	1500 to 2000 V
DC component use range	0 to -800 V
DC component voltage correction factor	environment sensor output (temperature, humidity), drum film thickness detection current value

T-7-7

Developing bias	
AC component use range	1500 Vp-p (fixed)
DC component use range	-200 to -900 V
DC component voltage correction factor	Environment sensor output value (temperature/ humidity), drum film thickness detection current value

T-7-8

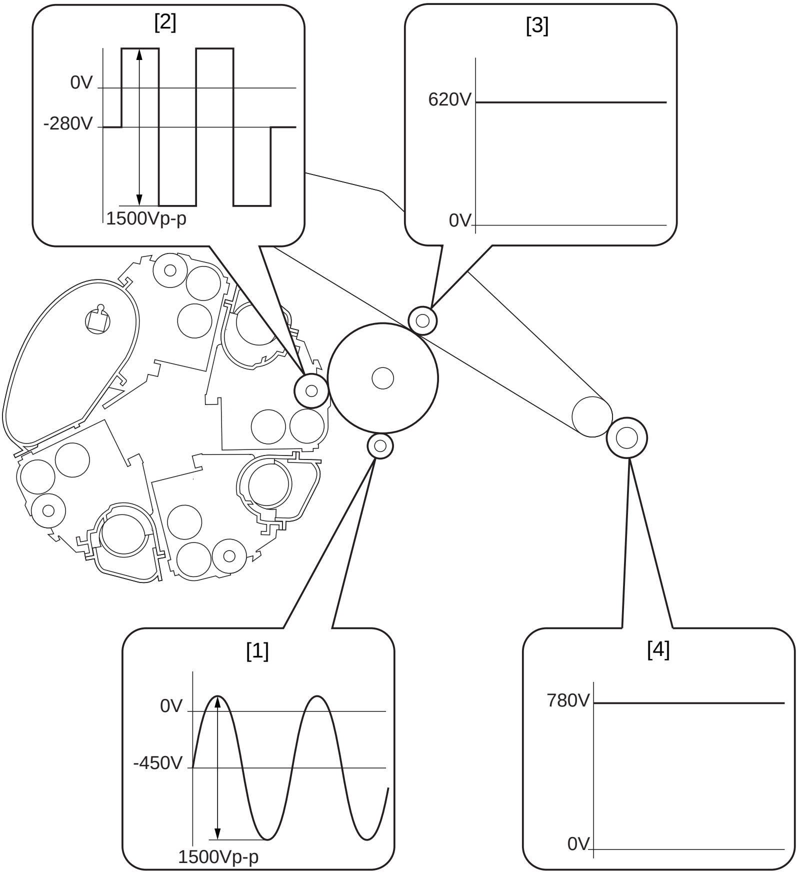
Primary transfer bias

Transfer method	Roller transfer
Transfer target	Intermediate transfer belt
DC component use range	0 to 1200 V
Voltage correction factor	environment sensor output value (temperature, humidity), print mode (full color, mono color), color

T-7-9

Secondary transfer bias

Transfer method	roller transfer
Transfer target	paper
DC component use range	-4000 to +6500 V
Voltage correction factor	environment sensor output value (temperature, humidity), print mode (full color, mono color), pickup mode (single-sided, double-sided), paper type


[2]
0V
-280V
1500Vp-p
[3]
620V
0V
[1]
0V
-450V
1500Vp-p
[4]
780V
0V

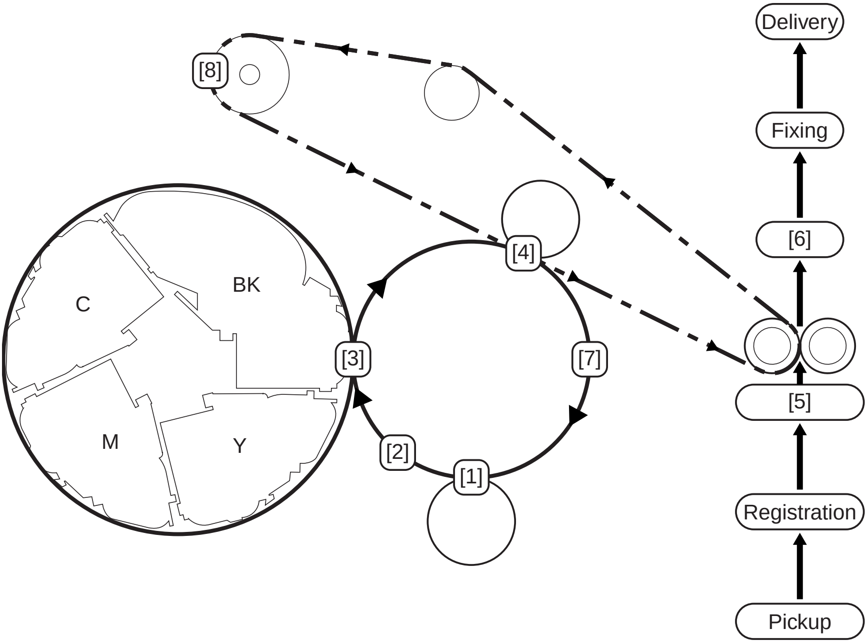
F-7-2

- Full color, Plain paper, Normal temperature/humidity, Single-sided, Yellow, New drum unit (reference only)

[1] Primary charging
[2] Development
[3] Primary transfer
[4] Secondary transfer

7.2 Image Formation Process

7.2.1 Image Formation Process (outline)


Delivery
Fixing
[6]
[5]
Registration
Pickup
[8]
[4]
[3]
[7]
[2]
[1]
BK
C
M
Y

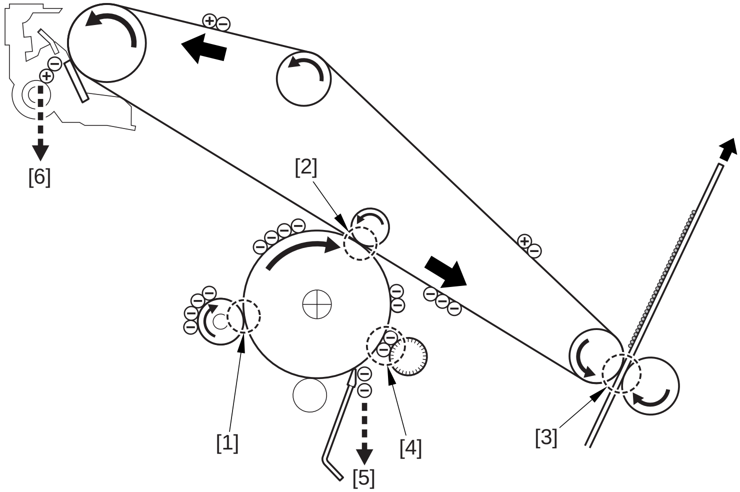
F-7-3

T-7-10

Item	Description
[1] Primary charging	charges the surface of the photosensitive drum to an even layer of negative potential.
[2] Laser exposure	forms a static image on the drum.
[3] Development	turns the static image on the drum into a visible image.
[4] Primary transfer	transfers the image from the drum to the ITB. (if full color, individually for Y, M, C, and K)
[5] Secondary transfer	transfers the image from the ITB to paper.
[6] Separation	separates paper from the ITB.
[7] Drum cleaning	removes toner from the drum.
[8] ITB cleaning	removes toner from the ITB.

Memo:
The machine does not perform pre-exposure. It removes charges from the drum by applying a specific level of AC bias to the primary charging roller during initial multiple rotation.

7.2.2 Image Formation Process (image formation)



F-7-4

[1] Using the difference in potential between the drum surface and the developing sleeve, the machine causes the toner to move to the static image of the drum, turning it into a visible image.

[2] Using the bias voltage applied to the primary transfer roller, the machine transfers the toner from the drum to the ITB.

[3] Using the bias voltage applied to the secondary transfer outside roller, the machine transfers the toner from the ITB to the paper.

[4] Using the brush roller, the machine stirs up the toner remaining on the drum (not having moved to the ITB), thus decreasing its bond to the drum.

[5] Using the cleaning blade positioned in contact with the drum, the machine scrapes off the residual toner from the drum.

[6] Bringing the ITB cleaning blade in contact with the ITB, the machine scrapes off the toner remaining on the ITB.

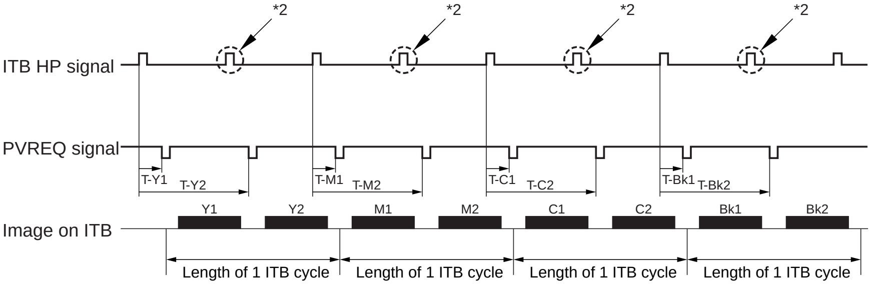
7.2.3 2-Side Placement Control

The machine uses the paper placement control mechanism to increase productivity.

In principle, when full color copies are made or when thick paper is used to generate multiple output, the machine forms images for 2 output sides on its ITB.*1
The machine uses the ITB HP signal when forming images for both 1st and 2nd sides.

<Particulars of Control>
EX: Full color, Plain paper, A4, 2 copies

The machine forms 4-color (YMCBk) images on its ITB in the following sequence:


*2
*2
*2
*2
ITB HP signal
PVREQ signal
T-Y1
T-Y2
T-M1
T-M2
T-C1
T-C2
T-Bk1
T-Bk2
Y1
Y2
M1
M2
C1
C2
Bk1
Bk2
Image on ITB
Length of 1 ITB cycle
Length of 1 ITB cycle
Length of 1 ITB cycle
Length of 1 ITB cycle

F-7-5

T-Y1/M1/C1/Bk1: time from when the ITB HP signal is detected to when the PVREQ signal for the 1st side is sent.
T-Y2/M2/C2/Bk2: time from when the ITB HP signal is detected to when the PVREQ signal is sent.

*1 The machine uses the 1-side placement mechanism for the following, as they do not permit the use of the 2-side placement mechanism:
- there is a delay in the transmission of the image data for the 2nd side from the main controller.
- the length of the paper in sub scanning direction is in excess of 216 mm.
- the manual feed tray is used as the source of paper.
- the No. 3 delivery slot is used for delivery.

- the first 2nd or the last 2nd copy is being handled in duplex mode.
- envelopes are used.

*2: the HP signal is ignored in this interval.

7.3 Basic Sequence

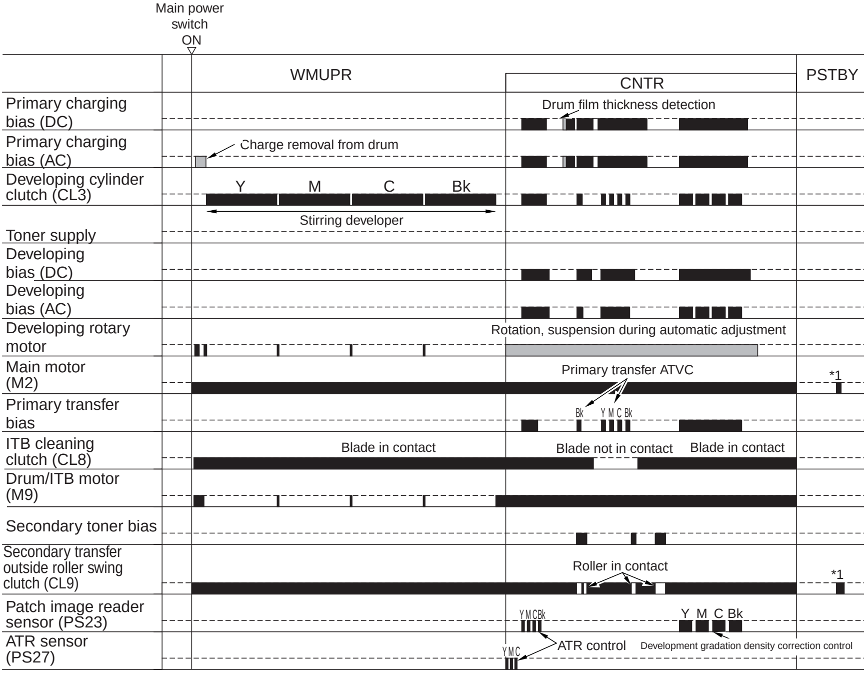
7.3.1 Power-On

The machine goes thorough the following sequence of operations when its main power switch is turned on while the surface temperature of the fixing roller is less than 50 deg C (as in the morning, when the machine is turned on after being left alone for a long time).

<Characteristics>

- immediately after the start of the sequence, the machine checks the home position of the developing rotary and removes charges from the drum surface.
- stirs up the developer inside the individual developing units (colors), and deposits an even coating of developer on the developing cylinder.
- the machine takes about 360 sec from when the main power switch is turned on to when it enters a standby state.
- the machine executes the following image stabilization control mechanisms while warm-up rotation is taking place:

ATR correction control, drum film thickness detection control, primary transfer ATVC control, developing gradation density correction control


Main power switch ON
WMUPR
CNTR
PSTBY
Primary charging bias (DC)
Drum film thickness detection
Primary charging bias (AC)
Charge removal from drum
Developing cylinder clutch (CL3)
Y
M
C
Bk
Stirring developer
Toner supply
Developing bias (DC)
Developing bias (AC)
Developing rotary motor
Rotation, suspension during automatic adjustment
Main motor (M2)
Primary transfer ATVC
*1
Primary transfer bias
Bk
Y M C Bk
ITB cleaning clutch (CL8)
Blade in contact
Blade not in contact
Blade in contact
Drum/ITB motor (M9)
Secondary toner bias
Secondary transfer outside roller swing clutch (CL9)
Roller in contact
*1
Patch image reader sensor (PS23)
Y M C Bk
Y M C Bk
ATR sensor (PS27)
Y M C
ATR control
Development gradation density correction control

F-7-6

*1: in about 30 sec after the machine enters a standby state, it causes the secondary transfer outside roller to move away from the ITB.

<if the main power switch is turned on while the surface temperature of the fixing roller is 50 deg C or more>

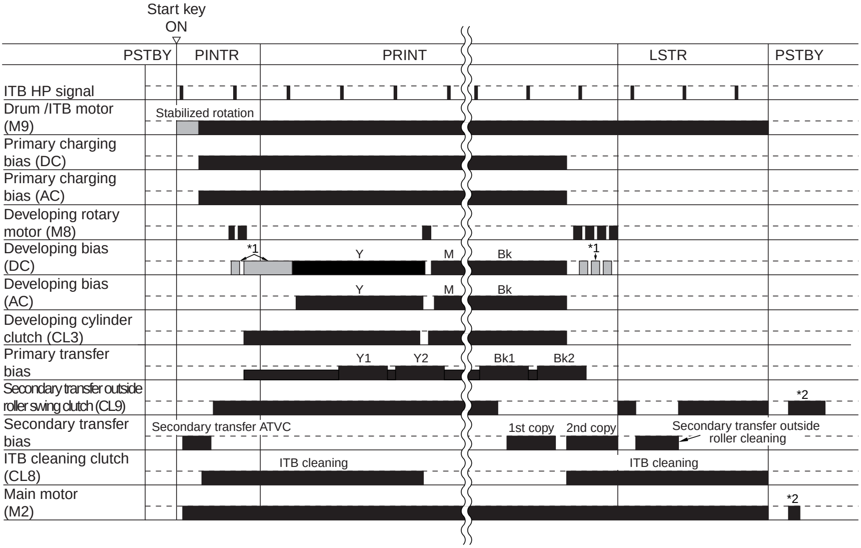
- the machine does not stir the developer.
- in principle, the machine does not execute image stability control; however, it executes development gradation density correction if any of the following conditions exists:
- there has been a significant change in the environment since the previous execution of the developing gradation density correction mechanism.
- the cumulative number of copies has reached 200 if full color or 1000 if mono color.
- the machine takes about 11 to 60 sec from when the main power switch is turned on to when it enters a standby state.

7.3.2 Copying/Printing (normal speed)

Full color, Plain paper, A4, 2 copies

<Characteristics>

- in the case of multiple output, the machine forms images for 2 sides of the same color on the ITB in succession. (2-side placement)
- while an image is on the ITB, the machine keeps the ITB cleaning blade and the secondary transfer outside roller from the ITB.


Start key
ON
PSTBY
PINTR
PRINT
LSTR
PSTBY
ITB HP signal
Drum /ITB motor (M9)
Stabilized rotation
Primary charging bias (DC)
Primary charging bias (AC)
Developing rotary motor (M8)
Developing bias (DC)
*1
Y
M
Bk
*1
Developing bias (AC)
Y
M
Bk
Developing cylinder clutch (CL3)
Primary transfer bias
Y1
Y2
Bk1
Bk2
Secondary transfer outside roller swing clutch (CL9)
*2
Secondary transfer bias
Secondary transfer ATVC
1st copy
2nd copy
Secondary transfer outside roller cleaning
ITB cleaning clutch (CL8)
ITB cleaning
ITB cleaning
Main motor (M2)
*2

F-7-7

*1: the machine applies a specific level of bias so as to prevent adhesion of toner and carrier form the developing cylinder to the drum.

*2: the machine moves the secondary transfer roller from the ITB 30 sec after it has entered a standby state.

<Mono Color Copying/Printing>

- the machine always uses the 1-side placement mechanism (as there is no need for depositing images of different colors on the ITB, i.e., the image formed on the ITB is immediately transferred to paper).

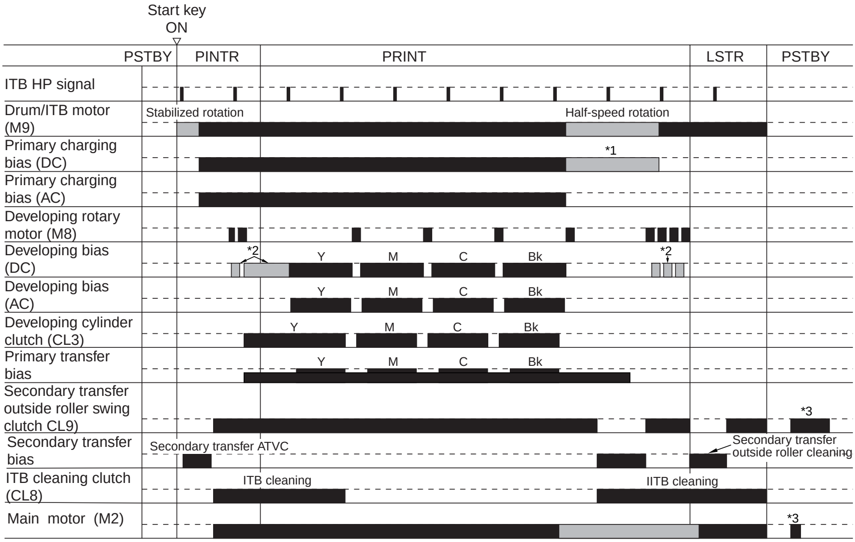
- the machine keeps the ITB cleaning blade and the secondary transfer outside roller in contact with the ITB at all times (even while an image is being formed on the ITB.

7.3.3 Copying/Printing (half-speed)

Full color, Thick paper, Postcard, Transparency, A4, 1 copy

<Characteristics>

- after forming an image on the ITB (all colors), the machine slows down the drum/ITB motor until they rotate at half its normal speed before it starts transfer operation.


Start key ON
PSTBY
PINTR
PRINT
LSTR
PSTBY
ITB HP signal
Drum/ITB motor (M9)
Stabilized rotation
Half-speed rotation
Primary charging bias (DC)
*1
Primary charging bias (AC)
Developing rotary motor (M8)
Developing bias (DC)
*2
Y
M
C
Bk
*2
Developing bias (AC)
Y
M
C
Bk
Developing cylinder clutch (CL3)
Y
M
C
Bk
Primary transfer bias
Y
M
C
Bk
Secondary transfer outside roller swing clutch CL9)
*3
Secondary transfer bias
Secondary transfer ATVC
Secondary transfer outside roller cleaning
ITB cleaning clutch (CL8)
ITB cleaning
IITB cleaning
Main motor (M2)
*3

F-7-8

*1: while the drum/ITB motor is rotating at a low speed, the machine applies a specific primary charging bias so as to prevent the toner on the ITB from returning to the drum.

*2: the machine applies a specific level of developing bias so that the toner and carrier on the developing cylinder will not adhere to the drum.

*3: the machine moves the secondary transfer outside roller from the ITB about 30 sec after it has entered a standby state.

<Mono Color Copying/Printing>

- Unlike when using normal speed, the machine forms images for 2 sides on the ITB in succession to increase the productivity of making multiple copies/prints. (2-side placement)

7.3.4 Copying/Printing a Mix of Color and Black-and-White Originals

The machine does not use special processing for the sequence it uses to make copies/prints of a mix of color and black-and-white originals; in other words, its operation is the same as the operation it uses to make copies/prints of color only or black-and-while only originals.

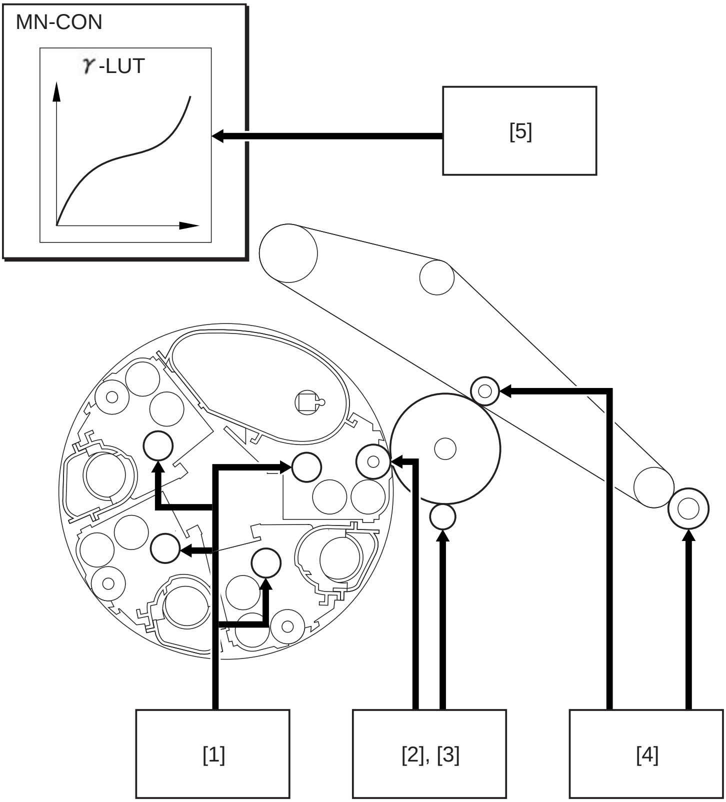
7.4 Image Stabilization Control

7.4.1 Outline of Image Stabilization Control

As changes occur in the environment or as more and more copies/prints are made, the machine can start to suffer unstable production of images. To ensure stable production of images, the machine is designed to perform the following control mechanisms:

T-7-11

Particulars of control	
[1] ATR control (video count, patch image density measurement)	enables accommodation of changes in toner density/toner consumption (determines toner supply amount)
[2] Drum film thickness detection control	corrects development contrast
[3] Developing contrast control	determines optimum primary charging DC bias, developing DC bias
[4] ATVC control	corrects transfer bias
[5] PASCAL control/development gradation correction control	accommodates changes in image gradation (corrects image density table)



F-7-9

7.4.2 Timing of Image Stabilization Control

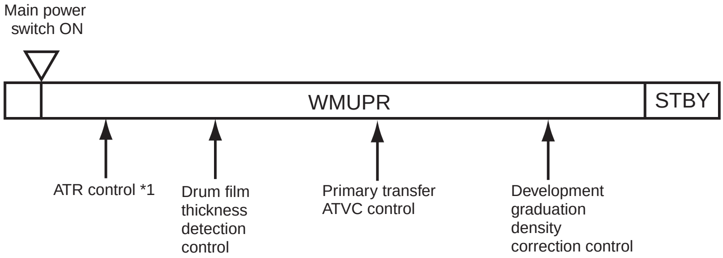
At Power-On

<Characteristics>

- in principle, the machine executes image stabilization control only when the surface temperature of the fixing roller is less than 50 deg C. However, it executes development gradation density correction control if any of the following conditions exist when the surface temperature of the fixing roller is 50 deg C or more:
- there has been a significant change in the environment since the execution of the previous

development gradation correction control.

- the cumulative number of copies has reached 200 if full color or 1000 if mono color.
- when the cover is opened/closed, toner cartridge is replaced, or return is made from a jam state, the machine executes image stabilization control if the surface temperature of the fixing roller is less than 50 deg C at the time.
- the machine takes about 127 sec to complete the execution.


Main power switch ON
WMUPR
STBY
ATR control *1
Drum film thickness detection control
Primary transfer ATVC control
Development graduation density correction control

F-7-10

*1: corrects the patch density target value (ATR sensor), corrects the toner supply amount (patch image read sensor).

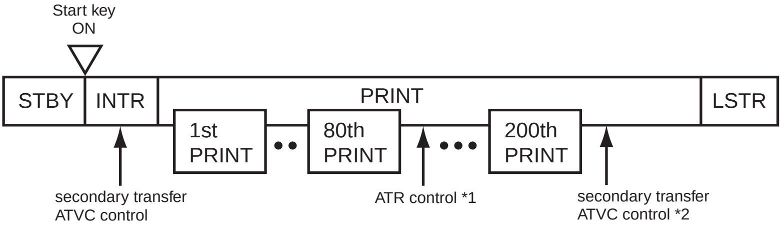
The following is a table of times taken by automatic control, including image stabilization control.

T-7-12

Operation		**Time (approx.)**
Power-on/Cover open/close	if the surface temperature of the fixing roller is less than 50 deg C	about 258 sec
	if the surface temperature of the fixing roller is 50 deg C or more	about 11 sec
Return from jam state	if the surface temperature of the fixing roller is less than 50 deg C	about 263 sec
	if the surface temperature of the fixing roller is 50 deg C or higher	about 24 sec

Operation		**Time (approx.)**
Toner cartridge replacement	if the surface temperature of the fixing roller is less than 50 deg C	about 319 sec
	if the surface temperature of the fixing roller is 50 deg C or more	about 75 sec
Return from low-power mode		about 11 sec

In Response to a Press on the Start Key (mono color)

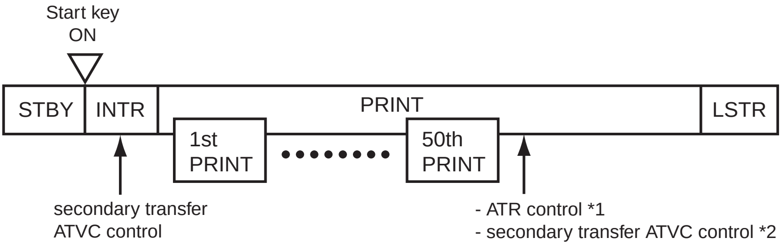

Start key
ON
STBY
INTR
PRINT
LSTR
1st
PRINT
80th
PRINT
200th
PRINT
secondary transfer
ATVC control
ATR control *1
secondary transfer
ATVC control *2

F-7-11

*1: corrects the toner supply amount; executes every 80 copies of 6 % originals (about 11 sec).

*2: executes every 200 copies (small size; about 6 sec).

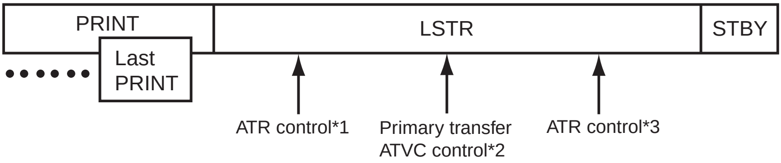
In Response to a Press on the Start Key (full color)


Start key
ON
STBY
INTR
PRINT
LSTR
1st
PRINT
50th
PRINT
secondary transfer
ATVC control
- ATR control *1
- secondary transfer ATVC control *2

F-7-12

*1: corrects the patch density target value; executes every 50 copies (about 25 sec).
*2: executes every 50 copies (small size; about 6 sec)

During Last Rotation



F-7-13

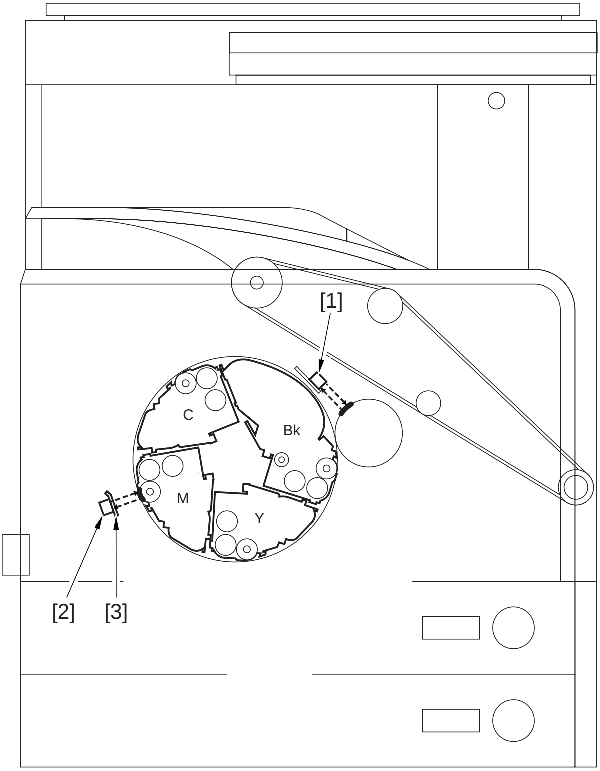
*1: the cumulative copies/prints made since the previous execution of ATR control (correction of the toner supply amount based on the patch image density measurement) has reached 48 (Bk only; about 11 sec).
*2: there has been a significant change in the environment (about 40 sec).
*3: the cumulative number of copies/prints made since the previous execution of ATR control (correction of the density target value based on the measurement of the developer density on the developing cylinder) has reached 40 for full color (Y, M, C only; about 25 sec).

7.4.3 ATR Control

The machine executes ATR control to keep the density (ratio of toner/carrier) inside the developing unit to a specific level, which otherwise would change over time.

<Particulars of Control>
The machine is not equipped with a means (sensor) of directly measuring the level of toner inside the developing unit. In its place, the machine forecasts the consumption of toner with reference to video count data to make up for the consumption of toner. The toner supply amount computed from the video count data is corrected at such times as programmed: the machine uses the difference in potential between the primary charging bias and the developing bias to form a patch density on the photosensitive drum. It reads the density of the patch using the patch image read sensor, and compares the result against the density target value to increase or decrease the toner supply amount. If the density of the patch

image changes because of changes in the developer characteristics, the machine will not be able to keep the density of the developer inside the developing unit to a specific level, which would cause the toner to move astray inside the machine or carrier to stick to the drum. To prevent such a problem, the machine corrects the density target value at such times as programmed, thereby keeping the density of developer inside the developing unit to a specific level. (In the case of Y, M, or C, the machine uses the density of the developer measured by the ATR sensor; in the case of Bk, on the other and, the machine corrects the density target value based on the reading of the counter designed for the developing unit (Bk; i.e., how may sheets have moved past it).



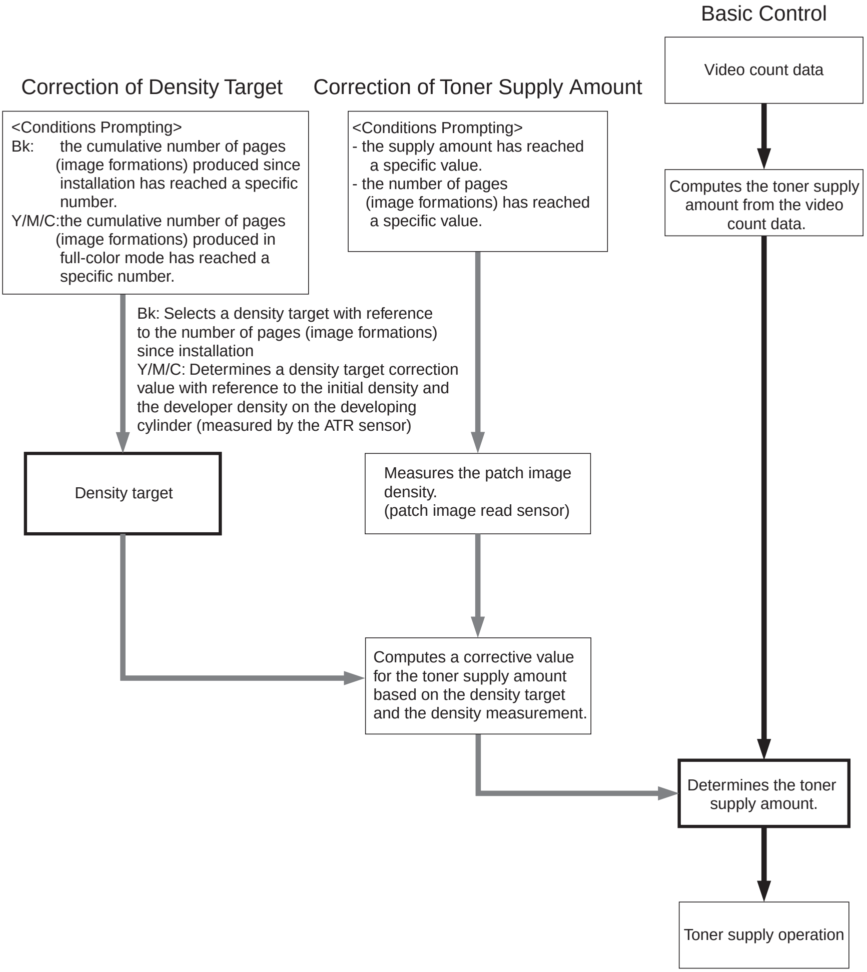
F-7-14

[1] Patch image read sensor

[2] ATR sensor

[3] ATR sensor shutter

Flow of ATR Control


Basic Control
Correction of Density Target
Correction of Toner Supply Amount
Video count data
Computes the toner supply amount from the video count data.
<Conditions Prompting>
Bk: the cumulative number of pages (image formations) produced since installation has reached a specific number.
Y/M/C:the cumulative number of pages (image formations) produced in full-color mode has reached a specific number.
<Conditions Prompting>
- the supply amount has reached a specific value.
- the number of pages (image formations) has reached a specific value.
Bk: Selects a density target with reference to the number of pages (image formations) since installation
Y/M/C: Determines a density target correction value with reference to the initial density and the developer density on the developing cylinder (measured by the ATR sensor)
Density target
Measures the patch image density.
(patch image read sensor)
Computes a corrective value for the toner supply amount based on the density target and the density measurement.
Determines the toner supply amount.
Toner supply operation

F-7-15

These individual measurements may be checked in service mode.

T-7-13

Item	Description	Optimum value
COPIER>DISPLAY>DENS		
DENS-Y/M/C/K	Use it to check the discrepancy of the patch image density from the target value. (%) [patch image read sensor]	-25 to +25
P-SENS-P	Use it to check the background measurement taken of the photosensitive drum. (P wave; positive reflection component) [P wave; patch image read sensor]	400 to 600
SGNL-Y/M/C	Use it to check the measurement of the developer density on the developing cylinder. [ATR sensor]	225 to 863
REF-Y/M/C	Use it to check the reference signal value of the developer density on the developing cylinder. (direct light from LED) [ATR sensor]	464 to 560
COPIER>ADJUST>DENS		
SGNL-Y/M/C	Use it to check the initial setting of the developer density on the developing cylinder. [ATR sensor]	336 to 752
REF-Y/M/C	Use it to check the initial reference signal value of the developer density on the developing cylinder. (direct light from LED) [ATR sensor]	464 to 560

Memo:
Checking the Soiling of the Window
When the window of the light-emitting/receiving segment of the patch image read sensor becomes soiled with stray toner, the machine will not be able to accurately measure the density of the patch image. To avoid the problem, the machine checks the patch image read sensor for soiling. While initial multiple rotation is under way, the machine measures the light from the surface of the drum without depositing any toner on it (drum background measurement); it will assume that the window is soiled if the measurement is lower than a specific level (COPIER>DISPLAY>DENS>P-SENS-P), thus indicating an error code (E020-0081) and stopping its operation.
Although the machine does not check the ATR sensor for soiling, the sensor is equipped

with a shutter to prevent soiling; the shutter opens only when the ATR sensor measures the developer density on the developing cylinder and remains closed at other times.

7.4.4 Drum Film Thickness Detection Control

As more and more copies are made, the film thickness of the photosensitive drum decreases; to make up for the decrease in the film thickness and, thus to correct the development contrast, the machine checks the film thickness with reference to the current flowing over the drum surface to determine the development contrast correction value.

<Particulars of Control>

1. using a specific level of charging AC bias, the machine removes charges from the drum surface.
2. the machine applies a specific level of charging DC bias to the primary charging roller, and measures the current flowing in response (i.e., current flowing over the drum surface) using the high-voltage PCB.

3. the machine communicates the detected current level to the DC controller PCB, and finds out the thickness of the drum film from the current level.
4. the machine determines the development contrast correction value based on the film thickness of the drum.

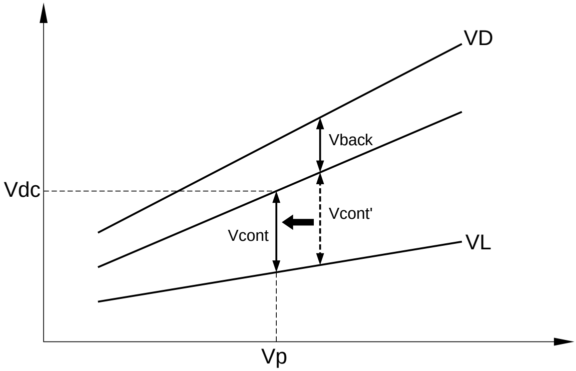
<Timing of Control>
See "Timing of Image Stabilization Control>

7.4.5 Development Contrast Control

The machine executes development contrast control to ensure a stable level of image density free of the effects of the development characteristics, which change according to the deterioration of the photosensitive drum and changes in the environment.

<Particulars of Control>

1. The machine sets up the development contrast potential (Vcont') and fogging removal potential (Vback) in keeping with the temperature/humidity inside the machine (readings of the environment sensor).
2. The machine corrects Vcont' and Vcont according to the film thickness of the drum (current flowing through the primary charging roller) it has measured during initial multiple rotation.
3. The machine determines the primary charging DC bias (Vp) and the developing DC bias (Vdc) to suit Vcont/Vback and the drum surface potential characteristics curve (VD-VL).



F-7-16

VD: drum dark area potential.

VL: drum light area potential (potential of area exposed by laser light).

7.4.6 ATVC Control

The machine executes ATVC control to determine an optimum transfer voltage it uses when it transfers toner from the photosensitive drum to the ITB and from the ITB to paper. It prepares a transfer voltage-current table so that the current occurring at time of transfer is as close as possible to the target transfer current.

T-7-14

Primary transfer ATVC	
Start-up timing	- during initial multiple rotation executed if the surface temperature of the fixing roller is less than 50 deg C when the main power switch is turned on. - during last rotation if there has been a rapid change in the environment since the previous execution of ATVC.
Particulars of control	starts up ↓ executes image formation sequence (mono color mode) ↓ applies a specific voltage to the primary transfer roller, and measures the current that occurs in response; then, using the measurement, it prepares a primary transfer contrast voltage-current table (for mono color mode). ↓ executes image formation sequence (full color mode) ↓ applies a specific voltage to the primary transfer roller, and measures the current that occurs in response; then, using the measurement, it prepares a primary transfer contrast voltage-current table (full color mode).
Factors determining target transfer current value	environment sensor output, print mode (mono, full), color

T-7-15

Secondary transfer ATVC	
Timing of start-up	- during initial rotation - between sheets after the number of prints (image formation) has reached a specific number

Secondary transfer ATVC	
Particulars of control	starts up ↓ applies a specific voltage to the secondary transfer outside roller, and measures the current that occurs in response: then, prepares a secondary transfer voltage-current table.
Factors determining target transfer current value	environment sensor output, print mode (mono, full), paper type

7.4.7 PASCAL Control (image gradation density correction)

The machine executes PASCAL control to ensure stable gradation density characteristics of images. It corrects the characteristics that otherwise would tend to change as a result of changes in the environment and deterioration of the photosensitive drum.
It reads a gradation pattern (64-gradation) of a test print using its reader unit to prepare an image density correction table.

starts up

↓

generates a text pattern (3 types, stored in the main controller) automatically.

↓

reads the test pattern print-out placed in the reader unit.

↓

prepares an image correction table A.

<Timing of Control>
- as needed (when 'Full Adjust' is under way under auto gradation correction in Additional Function)

7.4.8 Development Gradation Density Correction Control

The machine executes development gradation density correction so that the gradation density characteristics of images formed on the drum are stable against the changes that otherwise would occur because of changes in the environment and the deterioration of the environment.

The machine reads the patch image pattern (YMCK; 9 gradations each) formed on the photosensitive drum using the patch image read sensor, and prepares an image density correction table.

starts up

↓

using the patch image read sensor, measures the light reflected by the surface of the drum.

↓

forms a patch image pattern on the drum drawn from patterns stored in the main controller (without toner in the patch image)

↓

using the patch image read sensor, measures the density of the patch image pattern.

↓

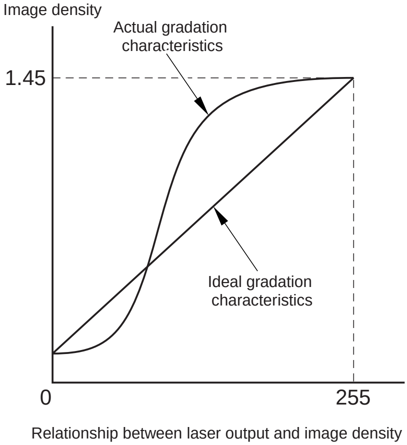
prepares an image correction table B or C.

<Timing of Control>

- as needed (while 'Full Adjust' or 'Quick Adjust' under auto gradation correction is under way in Additional Function
- automatic

7.4.9 Auto Gradation Correction Function

The machine corrects the mage density correction table so as to obtain an ideal set of gradation characteristics. It executes the control in response to a command sent in Additional Function.



F-7-17

The machine permits the selection of 'Full Adjust' or 'Quick Adjust' for Additional Function auto gradation correction. In full or quick mode of correction, the machine combines PASCAL control and development gradation density correction control for execution.

<Particulars of Control>

Full Adjust

1. using the density data of the gradation pattern in the test pattern collected by the reader unit, prepares an image correction table A. (PASCAL control)
2. from the density data of the gradation pattern on the drum read by the patch image read sensor, prepares an image correction table B.

Quick Adjust

1. using the density data of the gradation pattern on the drum read by the patch image read sensor, prepares an image correction table C.
2. using the image correction table B and the image correction table C, corrects the image correction table A.

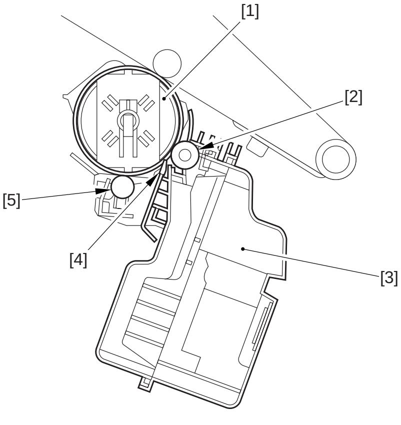
7.5 Drum Unit

7.5.1 Drum Unit

7.5.1.1 Construction of the Drum Unit

T-7-16

	Component	Description
[1]	Photosensitive drum	forms a static (latent) image using laser light.
[2]	Brush roller	stirs up the toner remaining on the drum from previous transfer to the ITB, thereby reducing its adhesion to the drum.
[3]	Waste toner collection case	collects toner scarped off by the cleaning blade.
[4]	Cleaning blade (polyurethane rubber)	scrapes off and removes the toner remaining on the drum from previous transfer to the ITB.
[5]	Primary charging roller	charges the surface of the photosensitive drum to an even layer of negative potential.

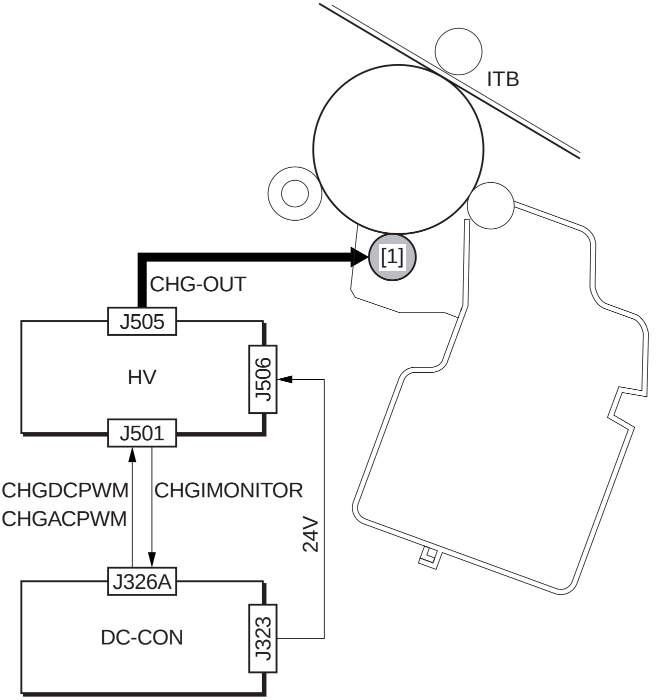


F-7-18

7.5.1.2 Charging Bias Control

AC component: output by constant current control.

DC component: output in keeping with the output of the environment sensor (temperature, humidity) and the drum film thickness current value.


ITB
[1]
CHG-OUT
J505
HV
J506
J501
CHGDCPWM
CHGACPWM
CHGIMONITOR
24V
J326A
DC-CON
J323

F-7-19

[1] Primary charging roller

CHGDCPWM: PWM signal for charging DC

CHGACPWM: PWM signal for charging AC

CHG-OUT: charging bias output signal

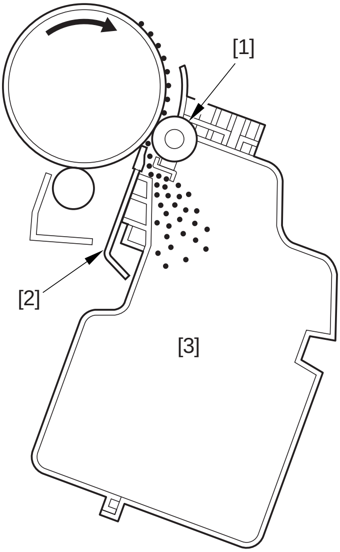
CHGIMONITOR: charging current detection signal

7.5.1.3 Drum Cleaning

The machine uses a cleaning blade to clean its photosensitive drum.

T-7-17

	Component	Description
[1]	Brush roller	stirs up the toner on the drum, thereby reducing its adhesion to the drum.
[2]	Cleaning blade (polyurethane rubber)	remains in contact with the drum at all times, and scrapes off residual toner from the drum.
[3]	Waste toner case	collects toner scarped off by the cleaning blade.



F-7-20

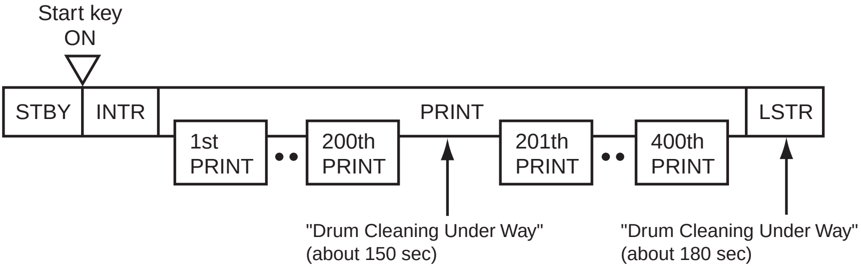
If the application of primary charging bias lasts too long (e.g., because of continuous copying/printing), the byproduct of discharge (ozone oxides) occurring in the primary charging assembly will build up on the drum surface, temporarily increasing the friction between the photosensitive drum surface and the cleaning blade, which ultimately warps the cleaning blade and lowers the cleaning performance. To prevent such a problem, the machine executes idle rotation of the drum, in which the byproduct of discharge is removed. While the machine rotates the drum idly, it indicates the message "Drum Cleaning Under Way" on its control panel.

<Timing of Start-up and Duration>

- while copying/printing is under way (about 150 sec) after the number of copies/prints made in succession has reached 800 images*1.
- during last rotation (about 180 sec max.*2)

*1: in the case of mono color, 800 copies; of full color, 200 copies.

*2: rotates the drum idly for a shorter or longer period of time according to the number of copies/prints.


Start key
ON
STBY
INTR
PRINT
LSTR
1st PRINT
200th PRINT
201th PRINT
400th PRINT
"Drum Cleaning Under Way" (about 150 sec)
"Drum Cleaning Under Way" (about 180 sec)

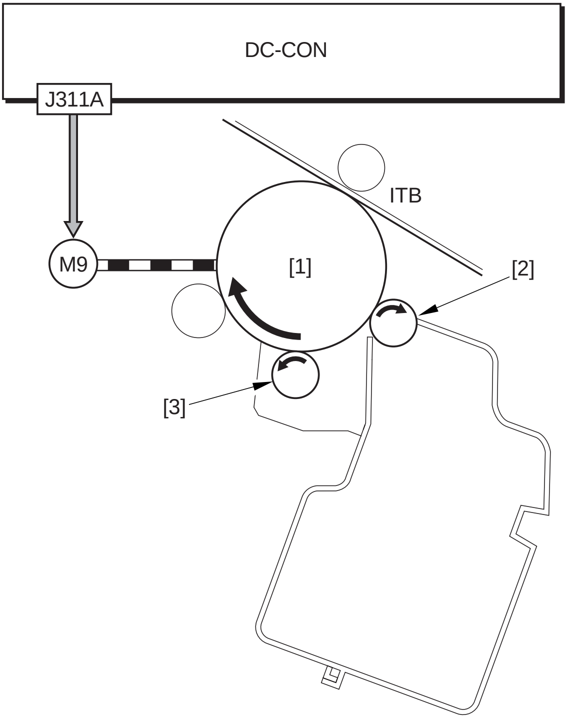
F-7-21

- Full color, Plain paper, A4, 400 copies

7.5.1.4 Drum Unit Drive Path

T-7-18

	Component	**Source of drive**
[1]	Photosensitive drum	drum/ITB motor (M9)
[2]	Brush roller	drum/ITB motor through gears
[3]	Primary charging roller	photosensitive drum (linked to drum)

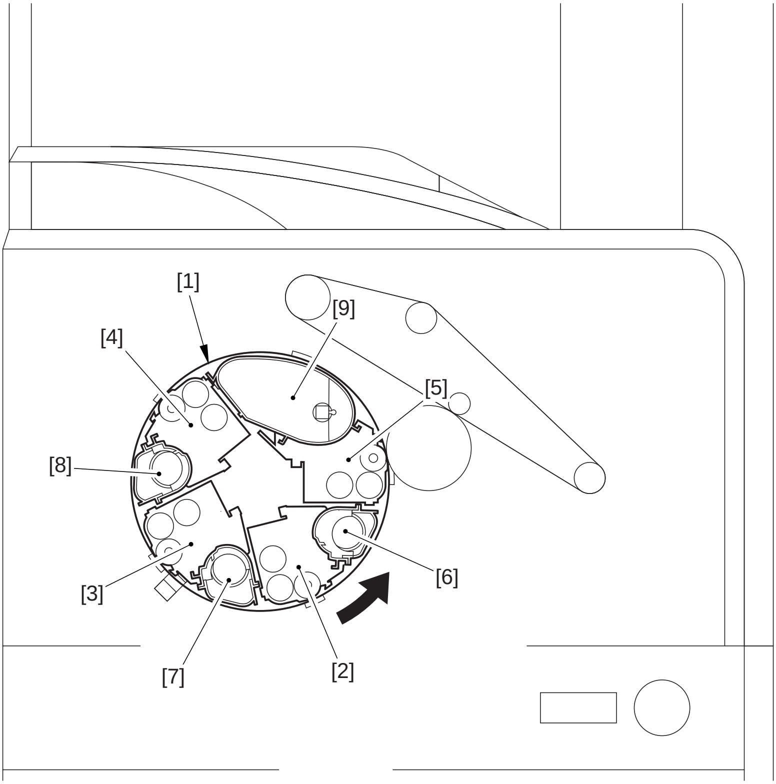


F-7-22

7.6 Developing Rotary

7.6.1 Construction of the Developing Rotary

The developing assembly consists of a developing rotary and 4 toner cartridges (YMCBk); the rotary in turn is equipped with 4 developing units YMCBk.
The developing rotary rotates counterclockwise to move the developing unit to the point of development (where the drum cylinder comes face to face with the drum) at time of development.



F-7-23

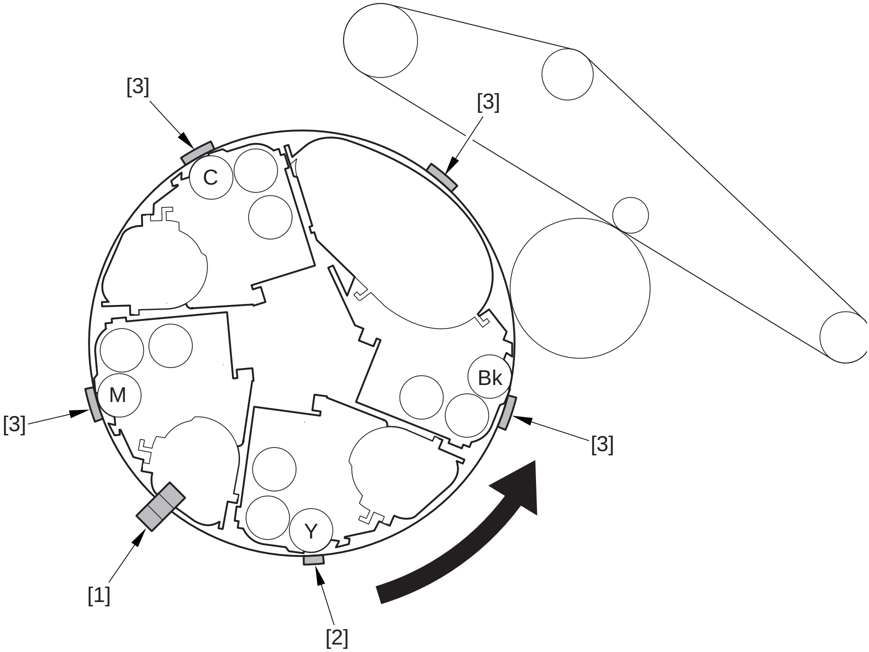
[1] Developing rotary

[2] Developing unit (Y)
[3] Developing unit (M)
[4] Developing unit (C)
[5] Developing unit (Bk)
[6] Toner cartridge (Y)
[7] Toner cartridge (M)
[8] Toner cartridge (C)
[9] Toner cartridge (Bk)

7.6.2 Developing Rotary Control

The developing rotary is controlled with reference to the rotary home position, which is where the developing rotary is rotated by 30 deg after the rotary HP sensor has detected the passage of the HP detecting sensor flag mounted to the circumference of the developing rotary. The machine uses this position to move the individual developing units to the point of development (where the developing cylinder comes face to face with the drum) and to the point of cartridge replacement and point of developer density measurement (where the YMC developing cylinder comes face to face with the ATR sensor).

- Developing Rotary Home Position



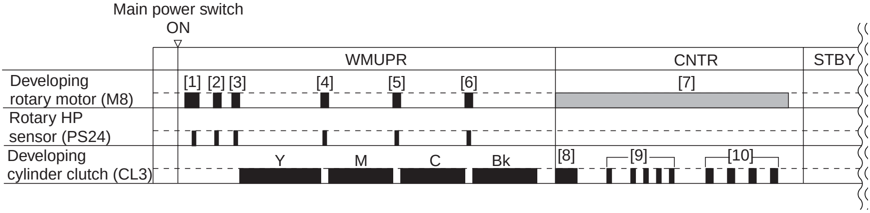
F-7-24

[1] Rotary HP sensor

[2] HP detection sensor flag

[3] Developing position detecting sensor flag

- Basic Sequence of Operations of the Developing Rotary (at power-on)



F-7-25

[1] rotation for detection of rotary HP

[2] move from rotary HP to point of Bk development

[3] move from point of Bk development to point of Y development

[4] move from point of Y development to point of M development

[5] move from point of M development to point of C development

[6] move from point of C development to point of Bk development

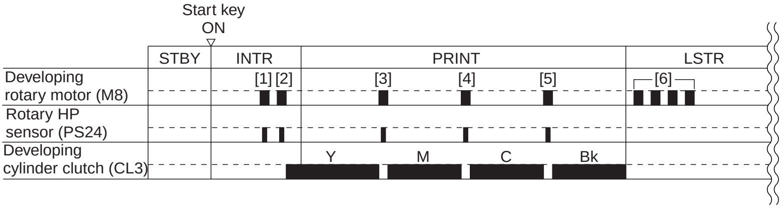
[7] rotation during image stabilization control

[8] ATR control

[9] primary transfer ATVC

[10]development gradation density correction

- Basic Sequence of Operations (developing rotary; full color)


Start key
ON
STBY
INTR
PRINT
LSTR
Developing rotary motor (M8)
Rotary HP sensor (PS24)
Developing cylinder clutch (CL3)
[1] [2]
[3]
[4]
[5]
[6]
Y
M
C
Bk

F-7-26

[1] move from rotary HP to point of Bk development

[2] move from point of Bk development to point of Y development

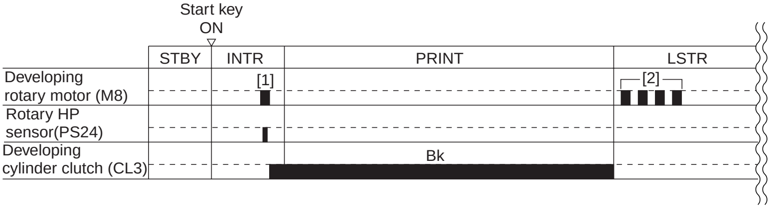
[3] move from point of Y development to point of M development

[4] move from point of M development to point of C development

[5] move from point of C development to point of Bk development

[6] move from point of Bk development to rotary HP

- Basic Sequence of Operations (developing rotary; mono color)


Start key
ON
STBY
INTR
PRINT
LSTR
Developing rotary motor (M8)
Rotary HP sensor(PS24)
Developing cylinder clutch (CL3)
[1]
[2]
Bk

F-7-27

[1] move from rotary HP to point of Bk development

[2] move from point of Bk development to rotary HP

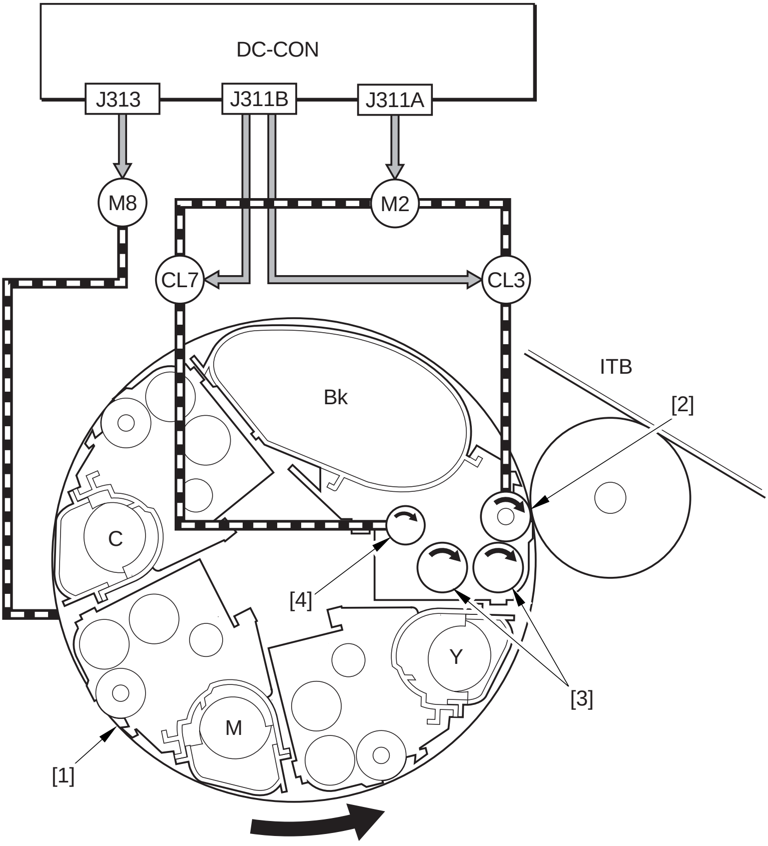
E021 (developing rotary rotation error)

1. the rotary HP sensor flag cannot be detected.
2. the sensor flag length detected during rotation is too long or too short.
3. the development sensor flag is not detected when the rotary stops at a point of development.

7.6.3 Developing Assembly Drive Path

T-7-19

	Component	**Source of drive**	**Remarks**
[1]	Developing rotary	rotary motor (M8)	uses the rotary home position to control the drive of the developing rotary.
[2]	Developing cylinder	main motor (M2)	driven when the clutch (CL3) goes on.
[3]	Developer stirring screw	main motor (M2)	driven when the clutch (CL3) goes on.
[4]	Toner feed screw	main motor (M2)	driven when the clutch (CL7) goes on.


DC-CON
J313
J311B
J311A
M8
M2
CL7
CL3
ITB
Bk
[2]
C
[4]
Y
M
[3]
[1]

F-7-28

7.7 Developing Unit

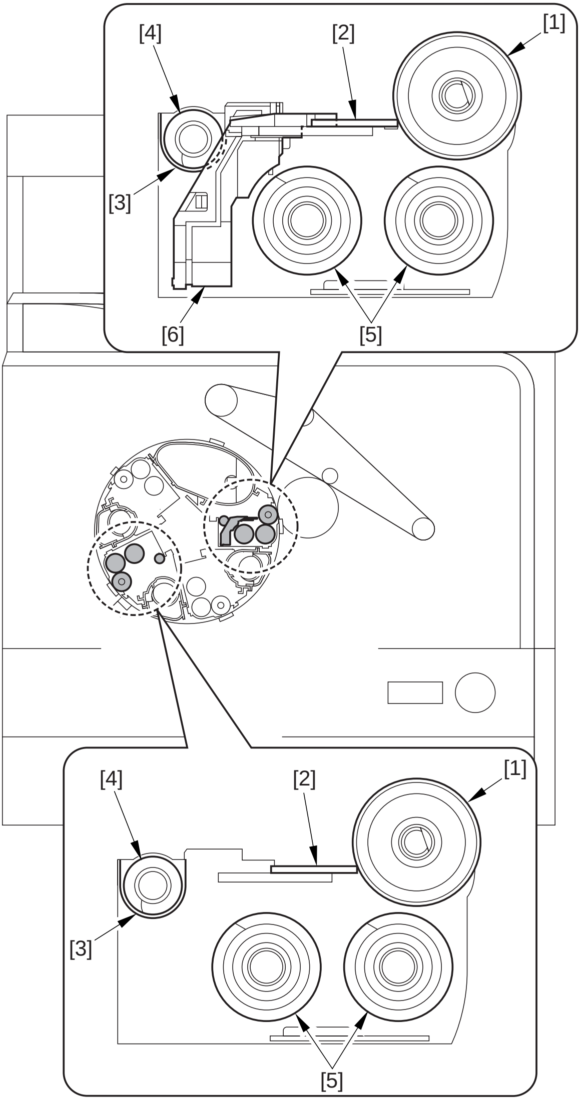
7.7.1 Construction of the Developing Unit

The machine's developing units differ between the Bk unit and the Y/M/C unit; while the former (Bk) is equipped with a waste carrier collection unit, the later (Y/M/C) is not.

T-7-20

Component		Description
[1]	Developing cylinder	retains developer (toner/carrier).
[2]	Developing blade	forms an even layer of developer on the developing cylinder.
[3]	Toner buffer assembly	retains toner from the toner cassette temporarily.
[4]	Toner feedscrew	feeds toner from the buffer assembly to the developing chamber.
[5]	Developer stirring screw	stirs up the developer and supplies it to the developing cylinder.
[6]	Waste carrier collection unit	collects waste toner*1.

*1: Bk developing unit only.


[4]
[2]
[1]
[3]
[6]
[5]
[4]
[2]
[1]
[3]
[5]

F-7-29

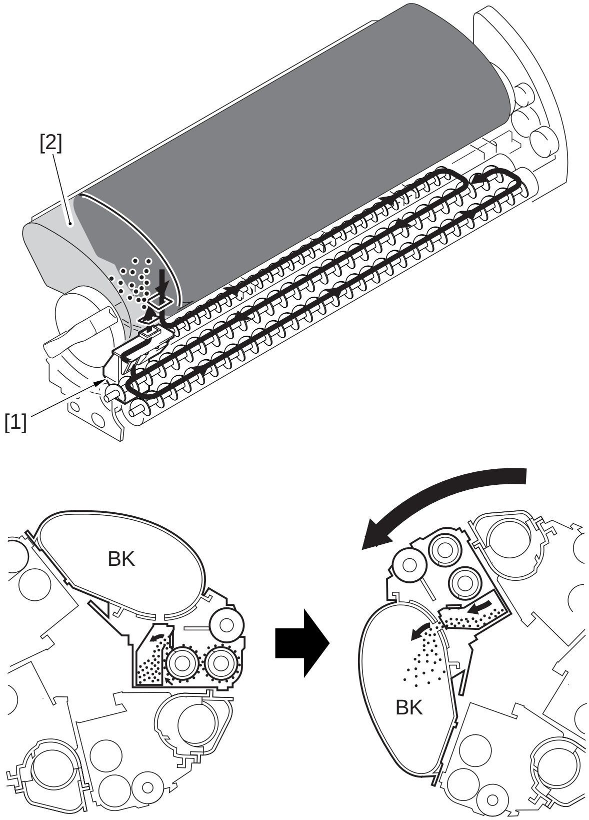
7.7.2 ACR Control (Auto Carrier Refresh control)

The machine uses the ACR control mechanism to enable longer use of carrier in the Bk developing unit.

The machine supplies developer (toner/carrier) from the Bk cartridge and, at the same item, collects the waste toner from the developing unit to the waste carrier collection chamber inside the toner cartridge.

<Descriptions of Mechanism>

1) As more and more developer is supplied from the toner cartridge, the amount of developer inside the developing unit increases.
2) The increase in the amount of developer is collected by the waste carrier collection unit while it is circulated inside the developing unit. Most of the developer being collected at this time consists of used (waste) carrier.
3) When the developing rotary rotates, the waste carrier falls on its own weight and is colleted inside the waste carrier collection chamber in the toner cartridge.

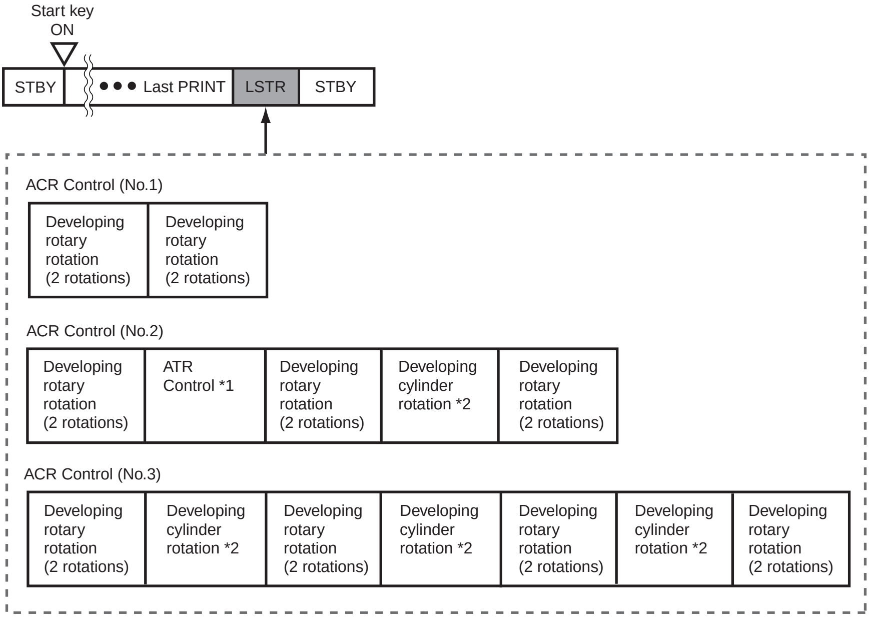


F-7-30

[1] Waste carrier collection unit (inside developing unit)
[2] Waste carrier collection chamber (inside toner cartridge)

<Control Details/Start-up Timing/Time Required>
When the amount of toner supply reaches its specified level in monochrome mode, ACR control is executed in last rotation or while copying/ printing.

a. In last rotation
Any of ACR Control No. 1 to No.3 is executed according to the amount of toner supplied during one copy/print operation.


Start key
ON
STBY
● ● ● Last PRINT
LSTR
STBY
ACR Control (No.1)
Developing rotary rotation (2 rotations)
Developing rotary rotation (2 rotations)
ACR Control (No.2)
Developing rotary rotation (2 rotations)
ATR Control *1
Developing rotary rotation (2 rotations)
Developing cylinder rotation *2
Developing rotary rotation (2 rotations)
ACR Control (No.3)
Developing rotary rotation (2 rotations)
Developing cylinder rotation *2
Developing rotary rotation (2 rotations)
Developing cylinder rotation *2
Developing rotary rotation (2 rotations)
Developing cylinder rotation *2
Developing rotary rotation (2 rotations)

*1: Correcting the amount of toner supply (Patch image detection).
It is executed only when start-up conditions of ACR Control are satisfied.

*2: Waste carrier in the developing unit is circulated for enhancement of its collection efficiency.

F-7-31

ACR Control (No.1)

Start-up Timing: Once every 15 sheets with a 5% image document (as a guide)

Time Required: Approx. 5 sec.

ACR Control (No.2)

Start-up Timing: Once every 15 sheets with a 30% image document (as a guide)

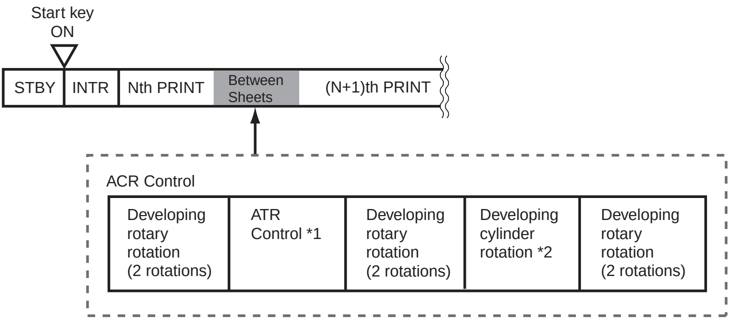
Time Required: Approx. 15 to 26 sec.

ACR Control (No.3)

Start-up Timing: Once every 1800 sheets (accumulated quantity) with a 5% image document (as a guide)

Time Required: Approx. 66 sec.

b. While copying/printing


Start key ON
STBY
INTR
Nth PRINT
Between Sheets
(N+1)th PRINT
ACR Control
Developing rotary rotation (2 rotations)
ATR Control *1
Developing rotary rotation (2 rotations)
Developing cylinder rotation *2
Developing rotary rotation (2 rotations)

*1: Correcting the amount of toner supply (Patch image detection).

*2: Waste carrier in the developing unit is circulated for enhancement of its collection efficiency.

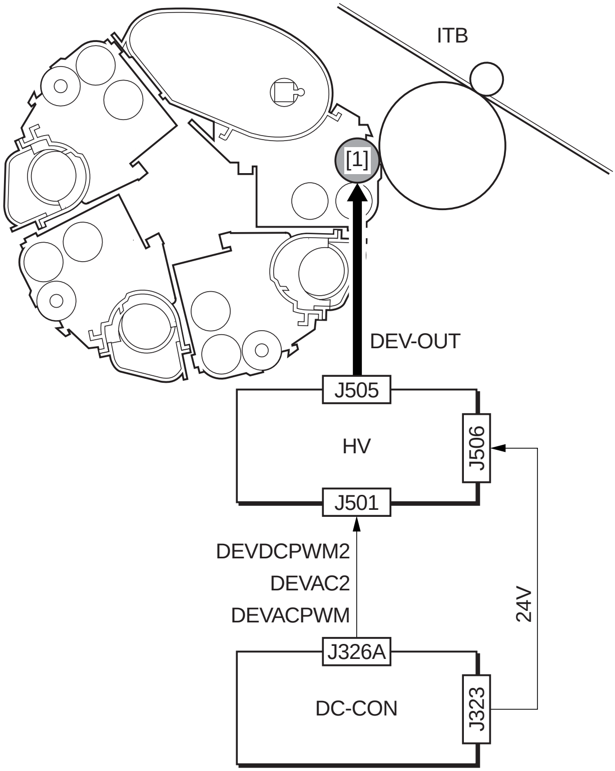
F-7-32

Start-up Timing: Once every 200 sheets with a 5% image document (as a guide)
Time Required: Approx. 26 sec.

F-7-33

7.7.3 Developing Bias Control

AC component: fixed.
DC component: in keeping with the output of the environment sensor (temperature, humidity), drum film thickness detection current.


ITB
[1]
DEV-OUT
J505
HV
J506
J501
DEVDCPWM2
DEVAC2
DEVACPWM
24V
J326A
DC-CON
J323

F-7-34

Developing Bias Control

[1] Developing cylinder

DEVDCPWM2: PWM signal for developing DC

DEVACPWM: PWM signal for development AC

DEVAC2: remote signal for developing AC

DEV-OUT: developing bias output signal

7.8 Toner Container

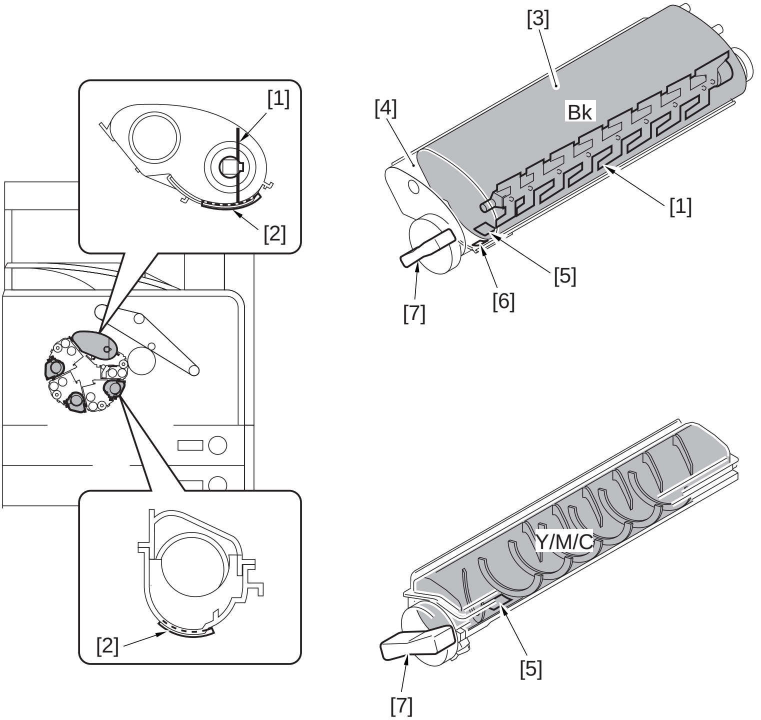
7.8.1 Construction of the Toner Cartridge

The machine uses different types of toner cartridge between Bk and Y/M/C; the latter type is not equipped with a toner feedscrew, and relies on the rotation of the developing rotary for movement of toner.

The Bk cartridge comes filled with toner and carrier mixed to a specific ratio; the amount of toner it contains is about 3 times that in a Y/C cartridge.

T-7-21

	Component	**Description**	
		Black	**Color**
[1]	Toner feedscrew	stirs up toner, and moves it to the buffer assembly inside the developing unit.	none
[2]	Toner shutter	opens or closes in response to the shutter open/close knob.	
[3]	Toner case	comes filled with toner; about 635 g (including about 95 g of carrier).	content: 170 g
[4]	Waste carrier collection chamber	collects waste carrier.	none
[5]	Supply mouth	moves and directs toner through it to the developing assembly.	
[6]	Collection mouth	moves waste carrier through it to the waste carrier collection chamber.	none
[7]	Shutter open/close knob	opens/closes the shutter.	



F-7-35

7.8.2 Toner Level Detection Control

The machine is not equipped with a means (sensor) to directly check the level of toner inside the toner cartridge (all 4 cartridges), and uses the measurements it takes of the patch images it forms on the photosensitive drum to find out the presence/absence of toner.

<Particulars of Control>

1) supplies toner to the inside of the developing unit.

2) forms a patch image on the photosensitive drum, and reads its density using the patch image read sensor.

3) compares the measurement against the reference value

v

i) if measurement >= reference value,

-> the machine assumes that toner exists inside the toner cartridge, and ends toner level detection control.

ii) if measurement < reference value

-> the machine repeats steps 1 through 3 a specific number of times; if the measurement still does not exceed the reference value, the machine will assume that toner does not exist inside the toner cartridge, and moves the developing rotary to the point of toner cartridge replacement and then indicates the message "No toner" on its control panel.

<Timing of Start-Up/Duration>

- if the patch image density measurement at time of ATR control is less then the reference value for a specific number of times.
- when the toner cartridge access cover/front cover is opened/closed after the machine identifies the absence of toner (the machine is not equipped with a sensor to check the presence/absence of the toner cartridge; it will execute toner level detection control automatically when the toner cartridge access cover/front cover is opened and closed after it has identified the absence of toner regardless of the presence/absence of a cartridge).

It takes about 70 sec for the machine to execute the control mechanism.

Memo:

In addition to the message "No toner," the machine uses the following 2 types of indications to inform the user of the level of toner:

a) Toner Level Meter

From the amount of toner consumed so far (i.e., from the number of toner supply operations) and the amount of toner held by a single toner cartridge, the machine assumes the remaining level of toner and indicates it by means of a 4-step meter (100%, 75%, 50%, 10%). The meter will remain 10% even when the toner level is computed to be less than 10%; the meter will be 0% only when the machine identifies the absence of toner as the result of patch image density measurement executed in relation to the aforementioned toner level detection control mechanism.

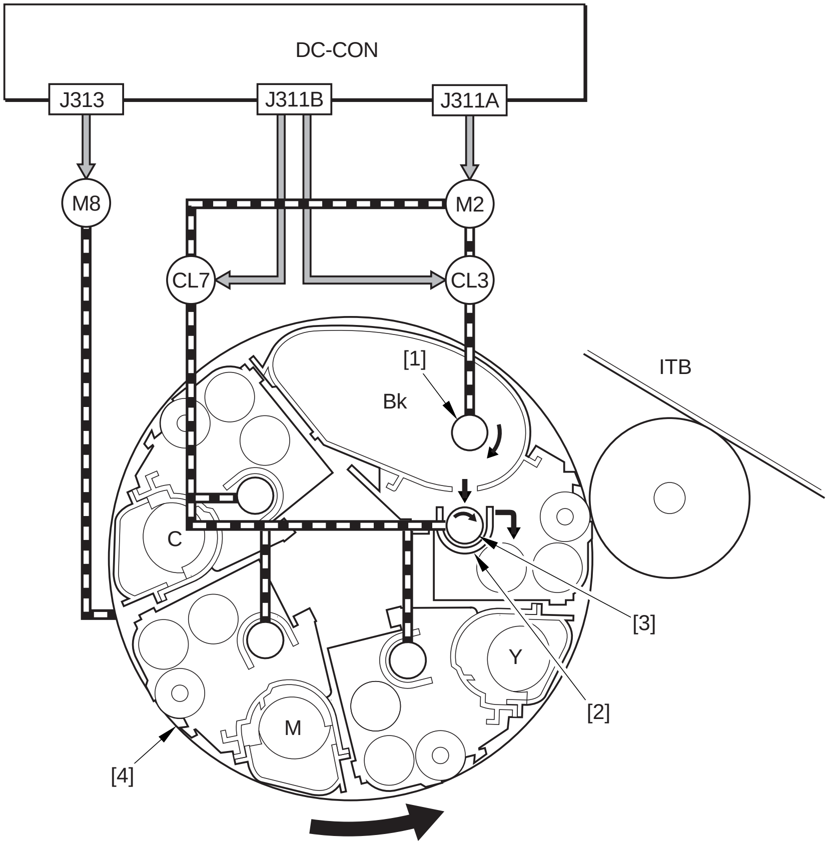
The meter will be returned to 100% when the DC Controller PCB is replaced or RAM of the DC Controller PCB is cleared. This is because the data of the amount of toner consumed so far (predicted from the number of toner supply operations) is stored only in SRAM on the DC Controller PCB. Although it depends on the amount of remaining toner in the cartridge right before either of the foregoing operations is executed, keep in mind that the toner-out message ("No toner") might be displayed even when the meter indicates 100%.

b) "Add toner"
From the amount of toner consumed so far (from the number of toner supply operations) and the amount of toner held by a single toner cartridge, the machine assumes the remaining level of toner; it indicates the message when the result of computation is less than 10%.

E026 (toner level detection operation upper limit)
Indicated if the toner density fails to return to a normal level after the machine has executed toner replacement and toner recovery mechanism 5 times in succession following the identification of the absence of toner. The machine supplies toner and then checks the level of toner; if it repeats detection without a new toner cartridge, the toner inside the developing unit will be exhausted, possibly causing stray toner and damage to the ITB. To avoid such a problem, the machine puts a limit on the number of times it executes toner level detection operations after the absence of toner has been identified:
0101- for Y toner cartridge
0201- for M toner cartridge
0301- for C toner cartridge
0401- for Bk toner cartridge

7.8.3 Toner Supply Control

The toner inside the toner cartridge is first sent to the buffer assembly of the developing unit for storage. Then, the movement of the toner feedscrew supplies toner from the toner buffer assembly to the developing chamber in an amount determined as the result of ATR control. The Bk toner cartridge uses a toner feedscrew mounted inside it to move toner, while a Y, M, or C toner cartridge relies on the rotation of the developing rotary (for lack of a feedscrew) to move toner along the protrusions arranged in a spiral inside the cartridge.


DC-CON
J313
J311B
J311A
M8
M2
CL7
CL3
[1]
Bk
ITB
C
Y
M
[3]
[2]
[4]

F-7-36

[1] Toner feedscrew (Bk only)

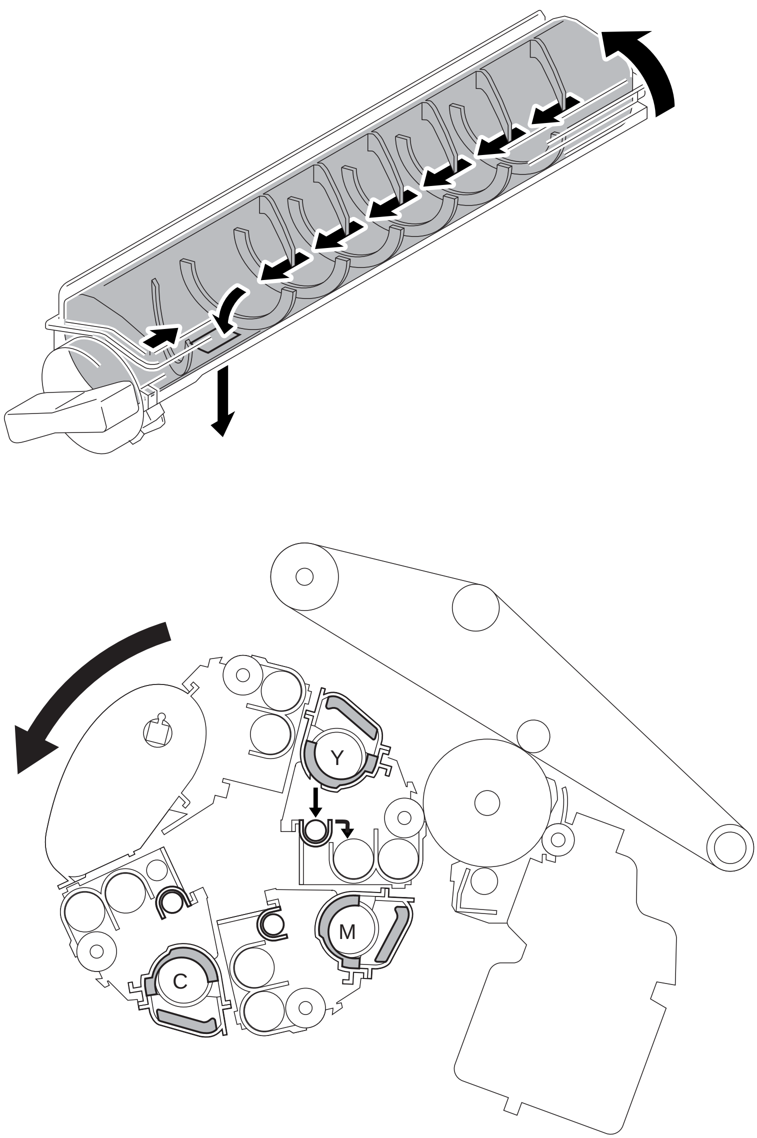
[2] Toner buffer assembly

[3] Toner feedscrew

[4] Developing rotary

M2: main motor

M8: developing rotary motor



F-7-37

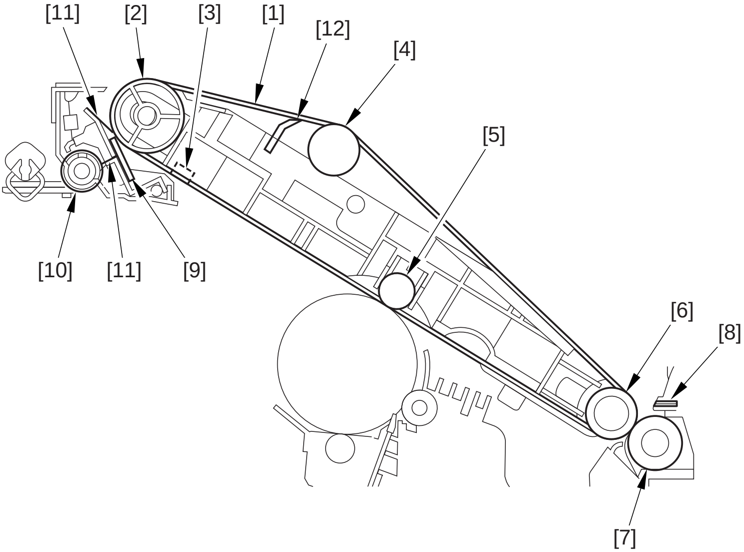
Moving the Toner Using the Rotation of the Developing Rotary (Y/M/C)

7.9 Transfer Device

7.9.1 Construction of the Transfer Assembly

T-7-22

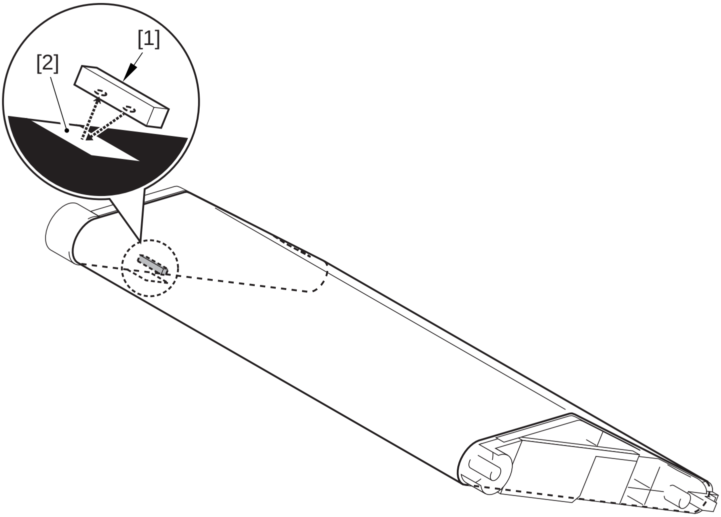
Component		Description
[1]	Intermediate transfer belt (ITB)	receives images (toner) formed on the photosensitive drum.
[2]	Drive roller	drives the ITB.
[3]	ITB home position sensors	detects the home position sticker (white) attached to the inside of the ITB.
[4]	Tension roller	retains ITB tension.
[5]	Primary transfer roller	applies transfer bias to transfer the toner from the photosensitive drum to the ITB.
[6]	Secondary transfer inside roller	transfers the toner from the ITB to paper using the application of transfer bias from the secondary transfer outside roller to the secondary transfer inside roller.
[7]	Secondary transfer outside roller	
[8]	Separation static eliminator	removes residual charges from the ITB.
[9]	ITB cleaning blade	scrapes off the toner remaining on the ITB.
[10]	ITB waste toner feedscrew	moves the waste toner from inside the ITB cleaning unit to the waste toner case.
[11]	Stray toner blocking sheet	prevents the waste toner from moving astray inside the machine at time of cleaning.
[12]	Inside blade	scrapes the toner for the inside of the ITB.



F-7-38

7.9.2 ITB Home Position Detection Control

When the ITB home position sensor detects the sticker (white) attached to the back of the ITB after the Start key is pressed, the machine generates the ITB home position signal, used to form and transfer images.

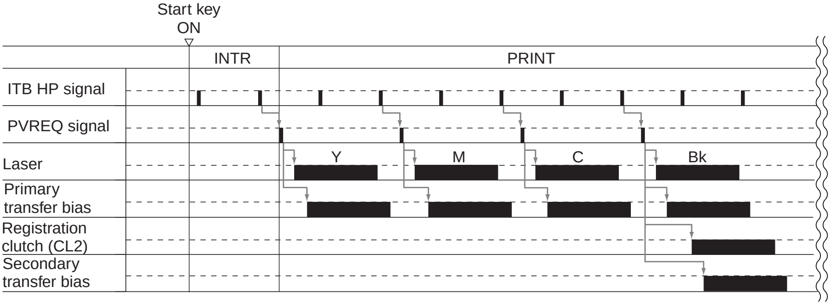


F-7-39

[1] ITB HP sensor
[2] ITB HP sticker (2 pc.)

- Full color, Normal speed

The machine uses the ITB home position signal (hereafter, ITB HP signal) to generate the PVREQ signal for individual colors (image request signal). The machine uses the PVREQ signal when it forms and transfers images.

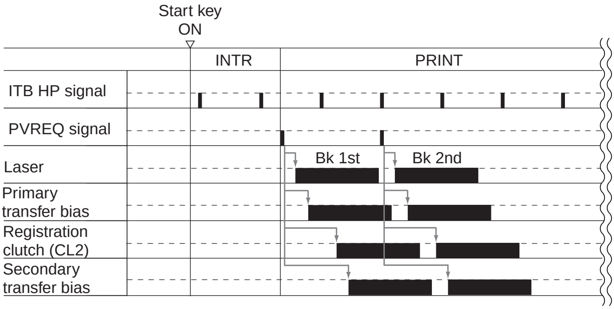


F-7-40

- Full color, Normal speed, 1 copy

- Mono color, Normal speed

The machine forms images not in synch with the ITB HP signal. It generates the PVREQ signal a specific period of time after it has become ready to form images, and uses the signal to form and transfer images.

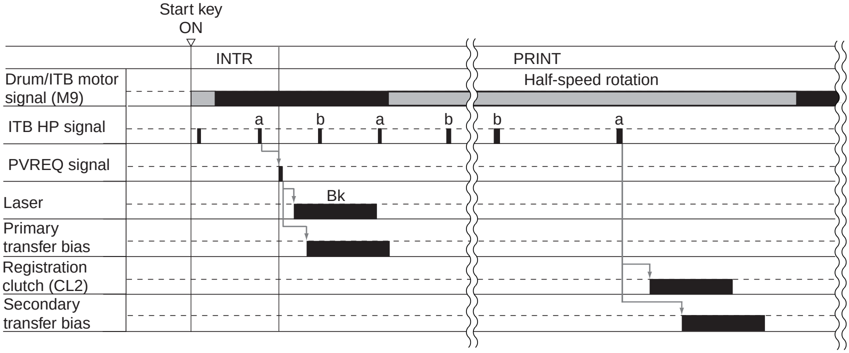

Start key
ON
INTR
PRINT
ITB HP signal
PVREQ signal
Laser
Bk 1st
Bk 2nd
Primary transfer bias
Registration clutch (CL2)
Secondary transfer bias

F-7-41

- Half-speed (both full and mono color)

The machine uses the ITB home position signal to generate the PVREQ signal (image request signal) for individual colors to serve as a reference when forming and transferring images.

The machine operates in half-speed mode to ensure good fixing on paper; after transfer to the ITB, it reduces the speed of the drum/ITB motor (DC brushless motor used to drive the fixing motor and the ITB) to half (68.5 mm/sec) the normal speed. After reducing the speed of the motor, the machine detects the ITB HP signal and turns on the registration clutch using the ITB HP signal as the reference.


Start key ON
INTR
PRINT
Drum/ITB motor signal (M9)
Half-speed rotation
ITB HP signal
a
b
a
b
b
a
PVREQ signal
Laser
Bk
Primary transfer bias
Registration clutch (CL2)
Secondary transfer bias

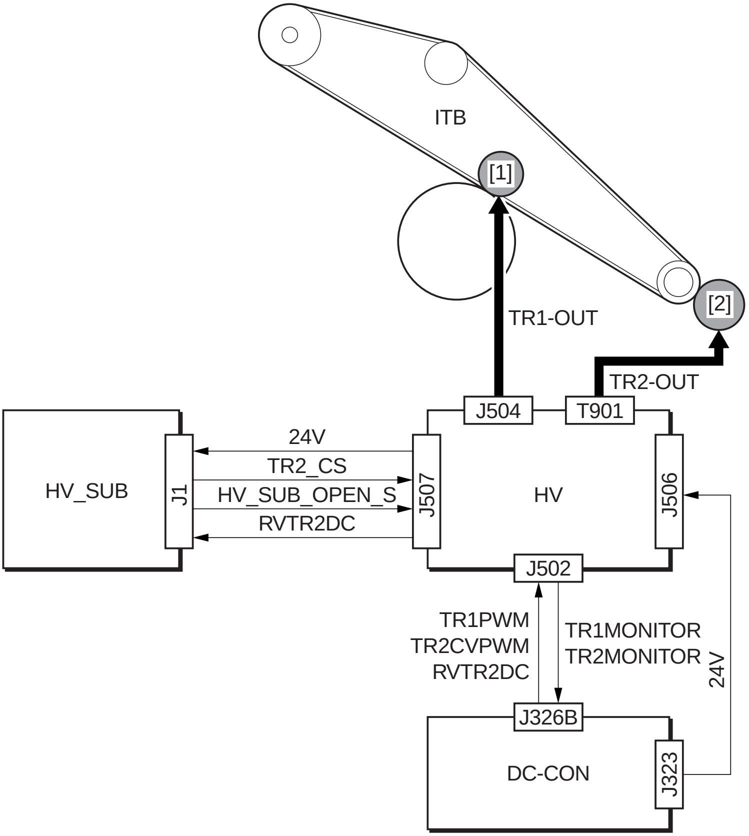
F-7-42

- Mono color, Half-speed, 1 copy

7.9.3 Transfer Bias Control

Primary transfer bias: output in keeping with the output of the environment sensor (temperature, humidity), print mode (mono, full color), and color.

Secondary transfer bias: output in keeping with the output of the environment sensor (temperature, humidity), print mode (mono, full color), pickup (single-, double-sided), and paper type.


ITB
[1]
[2]
TR1-OUT
TR2-OUT
J504
T901
HV_SUB
J1
24V
TR2_CS
HV_SUB_OPEN_S
RVTR2DC
J507
HV
J506
J502
TR1PWM
TR2CVPWM
RVTR2DC
TR1MONITOR
TR2MONITOR
24V
J326B
DC-CON
J323

F-7-43

[1] Primary transfer roller

[2] Secondary transfer roller

TR1PWM: PWM signal for primary transfer

TR2CVPWM: PWM signal for secondary transfer

TR1-OUT: primary transfer bias output signal

TR2-OUT: secondary bias output signal

TR1MONITOR: primary transfer current detection signal

TR2MONITOR: secondary transfer current detection signal

TR2_SUB: secondary transfer output detection signal

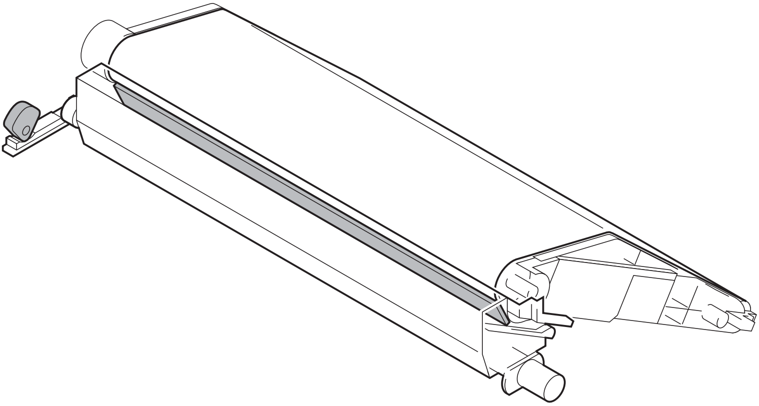
RVTR2DC, HV_SUB_OPEN_S: bias mode switching signal for secondary transfer

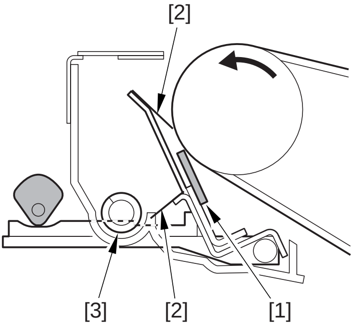
7.9.4 Cleaning the Intermediate Transfer Belt (ITB)

The machine uses a cleaning blade to clean the intermediate transfer belt (ITB).

T-7-23

Component	Description
[1] ITB cleaning blade	moves into contact with the ITB at all times to scrape off toner remaining on the ITB; while the machine is in standby, remains away from the ITB.
[2] Stray toner blocking sheet	prevents toner from moving astray during cleaning operation.
[3] ITB waste toner feedscrew	moves waste toner in the direction of the ITB waste toner case.





F-7-44

7.9.5 Cleaning the Secondary Transfer Outside Roller

The machine cleans the secondary transfer outside roller using static charges.

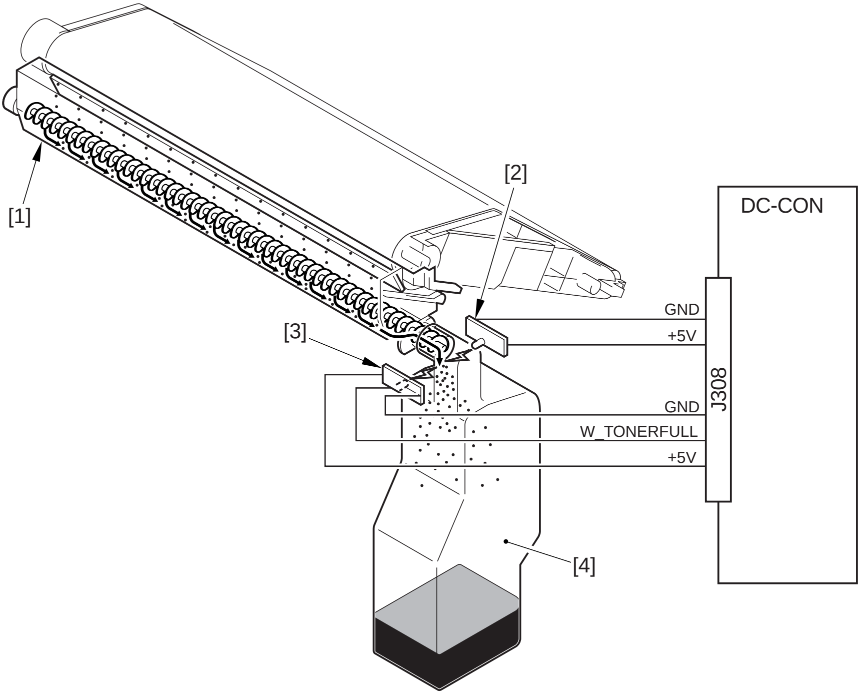
<Particulars of Control>
The machine alternately applies biases of opposite polarities to the secondary transfer outside roller (same and opposite in relation to the bias used when forming images), thereby returning the toner remaining on the secondary transfer outside roller to the ITB.

<Timing of Control>

- end of copy/print job
- return from jam state
- after formation of a patch image or test pattern as part of image stabilization control

7.9.6 ITB Waste Toner Collection Mechanism

The waste toner scraped off the ITB is collected in the ITB waste toner unit. The level of waste toner inside the unit is checked by means of a waste toner sensor (LED, photo transistor).



F-7-45

[1] ITB cleaning unit

[2] Waste toner sensor (light-emitting)

[3] Waste toner sensor (light-receiving)

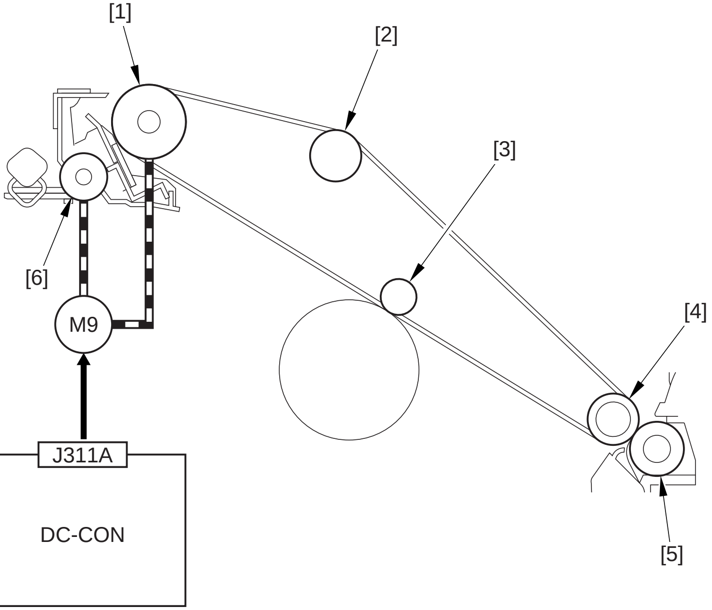
[4] ITB waste toner unit

When the machine finds that the unit is full of waste toner, it indicates the message "Replace the waste toner container." If copies/prints are made in succession thereafter, the machine will indicate an error code (E013) as soon as it has handled 500 copies (A4) and stops operation.

7.9.7 Transfer Assembly Drive Path

T-7-24

Component	**Source of drive**
[1] Drive roller	drum/ITB motor (M9)
[2] Tension roller	linked to ITB
[3] Primary transfer roller	linked to ITB
[4] Secondary transfer inside roller	linked to ITB
[5] Secondary transfer outside roller	linked to ITB
[6] ITB waste toner feedscrew	drum/ITB motor (M9)



F-7-46

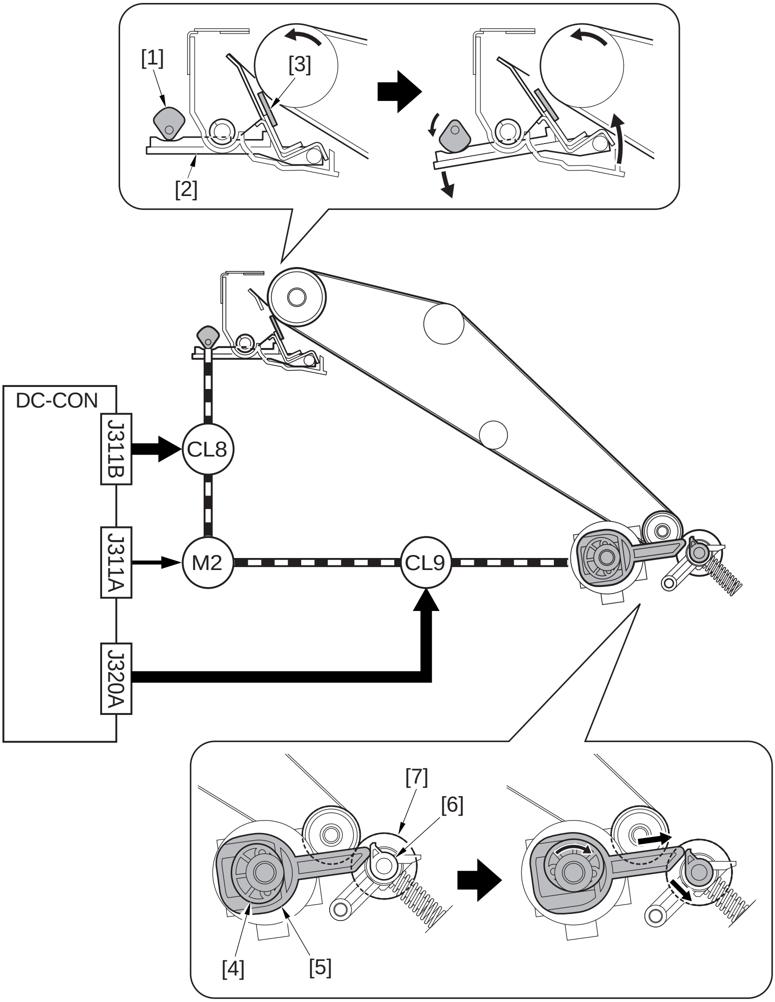
7.9.8 Transfer Assembly Swing Control

- ITB Cleaning Blade

When the clutch (CL8) goes on, the drive of the main motor (M2) is transmitted to a cam; when the releasing lever moves up and down, its associated ITB cleaning blade moves into contact with or moves away from the ITB. The ITB cleaning blade remains away from the ITB while the machine is in a standby state.

- Secondary Transfer Outside Roller

When the clutch (CL9) goes on, the drive of the main motor (M2) is transmitted to a cam, and the transfer locking arm pushes the secondary transfer arm, causing the latter to move away from the ITB. The secondary transfer outside roller moves away from the ITB if no copy/print job arrives within about 30 sec after the machine enters a standby state.


[1]
[3]
[2]
DC-CON
J311B
CL8
J311A
M2
CL9
J320A
[7]
[6]
[4]
[5]

F-7-47

[1] ITB cleaning swing cam

[2] Releasing lever

[3] ITB cleaning blade

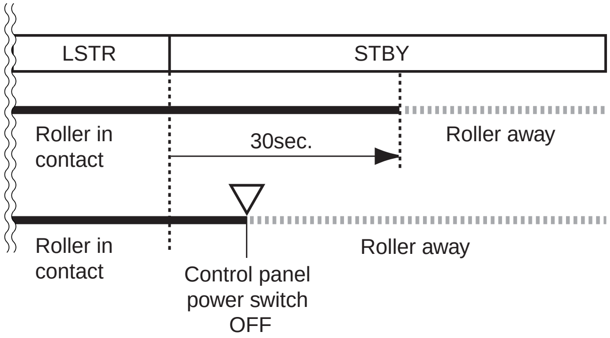
[4] Transfer locking cam

[5] Transfer locking arm

[6] Secondary transfer arm
[7] Secondary transfer outside roller

⚠Points to Note When Turning Off the Power

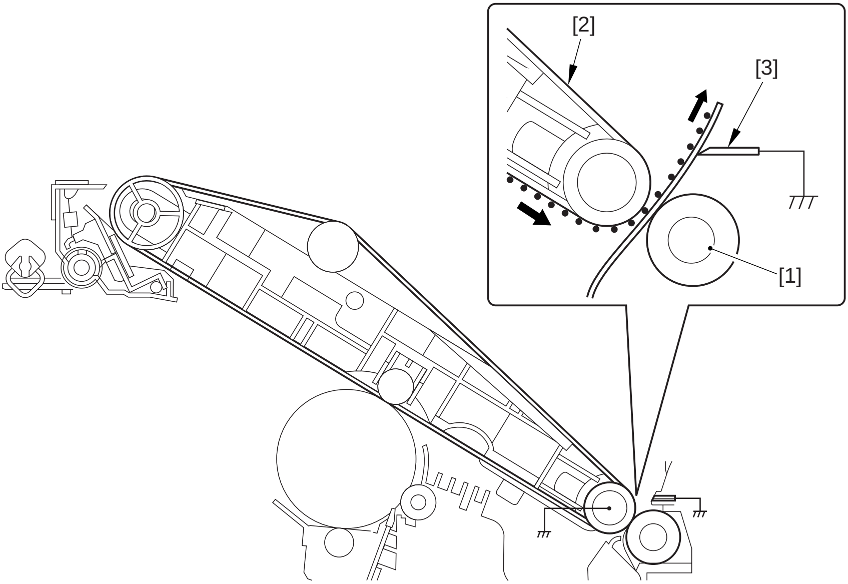
If you need to turn off the machine for service work, be sure to turn off the control panel power switch before turning off the main power switch. If the secondary transfer outside roller is left in contact with the ITB for a long time, the ITB can suffer traces of the roller. To avoid these traces, the machine is designed to automatically move the secondary transfer roller away from the ITB if there is no next job within about 30 sec after it has entered a standby state. Likewise, the machine moves away the secondary transfer outside roller when the control panel power switch is turned off. If you turn off the main power switch within about 30 sec after the machine enters a standby state, the machine will not be able to move the secondary transfer outside roller from the ITB, permitting it to leave traces on the belt.


LSTR
STBY
Roller in contact
30sec.
Roller away
Roller in contact
Control panel power switch OFF
Roller away

F-7-48

7.9.9 Separation

The machine uses a curvature method to separate paper; it is also equipped with a static eliminator to assist separation. The eliminator removes positive changes remaining on paper, thus preventing adhesion of paper (especially thin paper with little body) to the ITB.



F-7-49

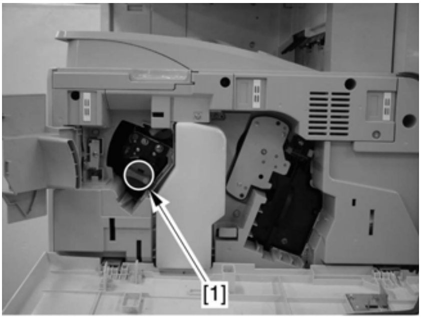
[1] Secondary transfer outside roller
[2] ITB
[3] Separation static eliminator

7.10 Parts Replacement Procedure

7.10.1 Drum Unit

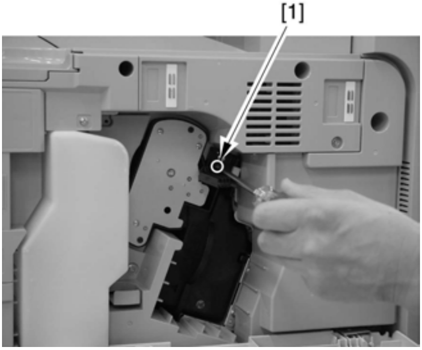
7.10.1.1 Removing the Drum Unit

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



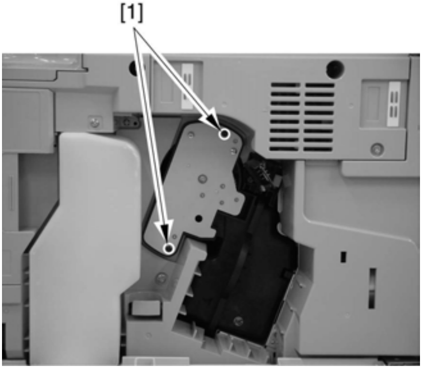
F-7-50

2) Remove the screw [1] (black; M3x20).



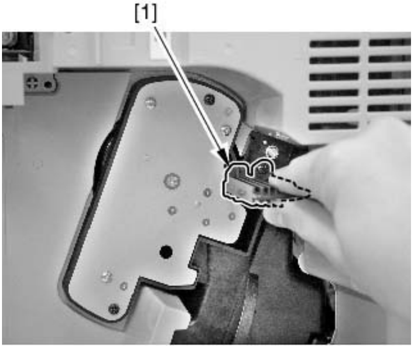
F-7-51

3) Remove the 2 fixing screws [1] (M4x20).

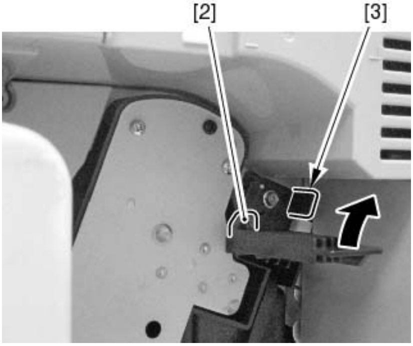


F-7-52

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

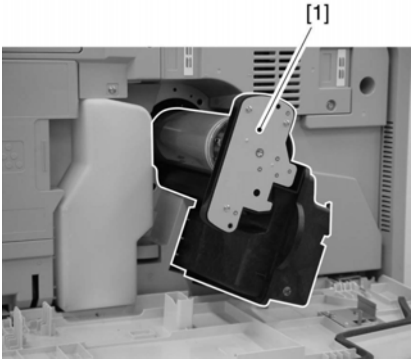


F-7-53



F-7-54

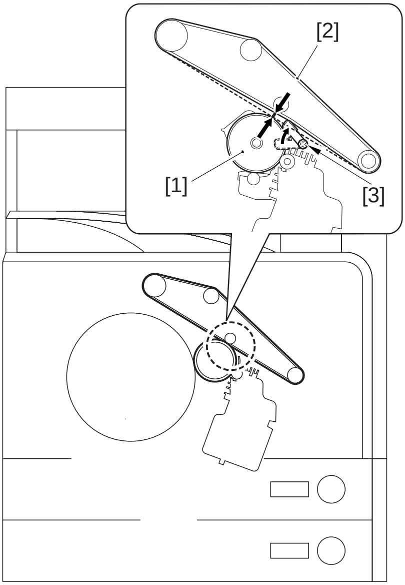
5) Slide out the drum unit [1] to the front to detach.



F-7-55

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



F-7-56

At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

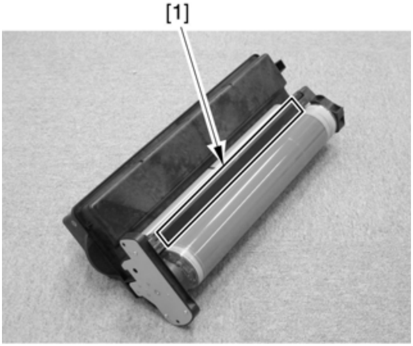
⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.1.2 Points to Note When Mounting the Drum Unit

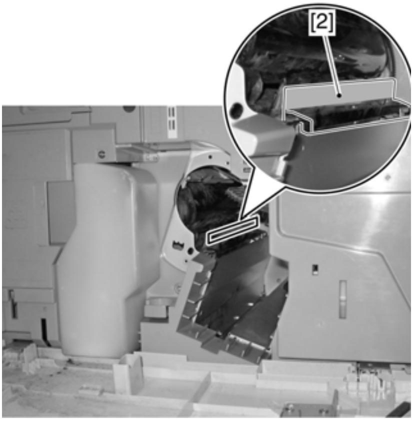
iR C3100

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-57



F-7-58

Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.1.3 After Replacing the Drum Unit

1) Initialize the drum unit. Execute the following service mode item.
   - COPIER>FUNCTION>CLEAR>DRM-LIFE

While initialization is under way, the machine flashes "ACTIVE" on its screen. It indicates "OK!" at the end of initialization in about 1 min.

⚠Do not touch any of the keys, open the door, or turn off the power while initialization is under way. Otherwise, go back to step 1) and start over.

---

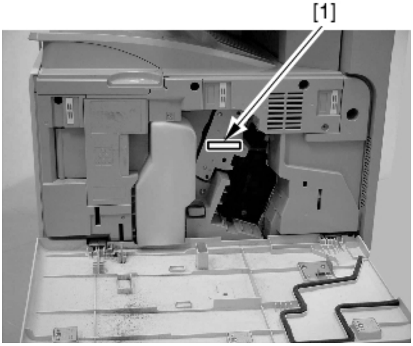
2) When initialization is done, check to see that the value of the following service mode item is '0':
   - COPIER>DISPLAY>MISC>DRM-LIFE

If not '0', go back to sep 1) and start over.

3) Record the value indicated in the following service mode item in the Remarks field of the drum initial value label (attached to the light-blocking sheet of a new drum unit):
   - COPIER>ADJUST>HV-PRI>DR-I-INT

As necessary, record the date of drum unit replacement and the counter reading on the drum initial value label.

4) Attach the drum initial value label to the front [1] of the drum unit.



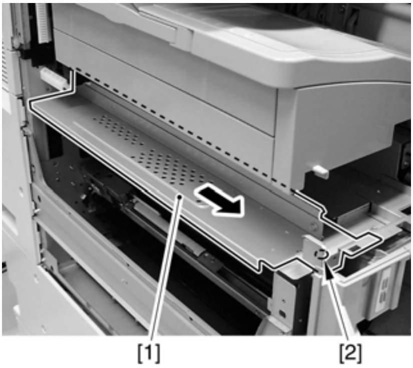
F-7-59

5) Execute 'Full Adjust' of auto gradation correction in Additional Function.

7.10.2 Development Unit

7.10.2.1 Finisher-P1 in Use

⚠If the machine is equipped with a Finisher-P1, be sure to detach it before removing the finisher unit. To detach the finisher rail [1], remove the screw [2], and force it in the direction of the arrow.



F-7-60

If you try to detach the developing unit without first removing the finisher rail, the developing cylinder can interfere with the finisher rail.

Memo:

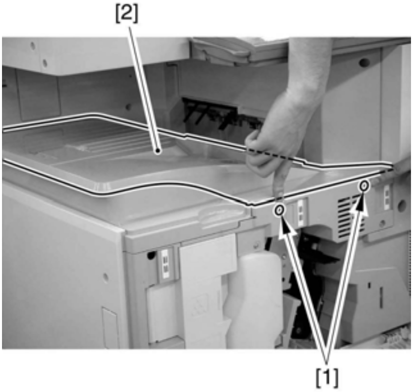
Recommended Work in the Presence of a Finisher-P1

To facilitate the removal of the developing unit, it is a good idea to remove not only the finisher rail but also the finisher itself before starting to remove the developing unit.

7.10.2.2 Removing the Delivery Tray

1) Open the front cover.

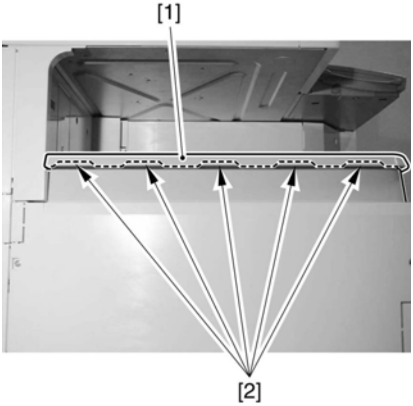
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-61

Points to Note When Mounting the Delivery Tray

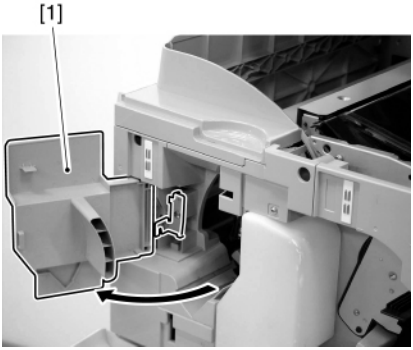
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-62

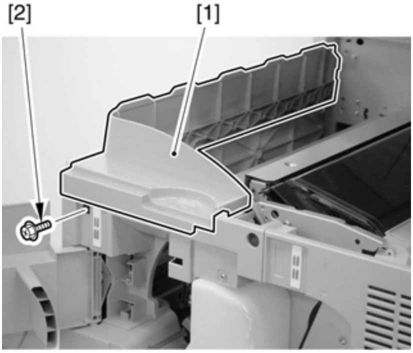
7.10.2.3 Removing the Delivery Tray Lower Cover

1) Open the toner cartridge access cover [1].



F-7-63

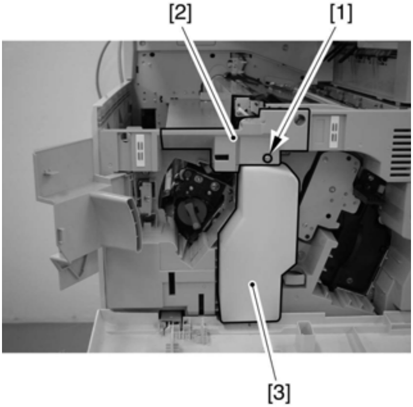
2) Remove the screw [2], and detach the delivery tray lower cover [1].



F-7-64

7.10.2.4 Removing the ITB Waste Toner Unit

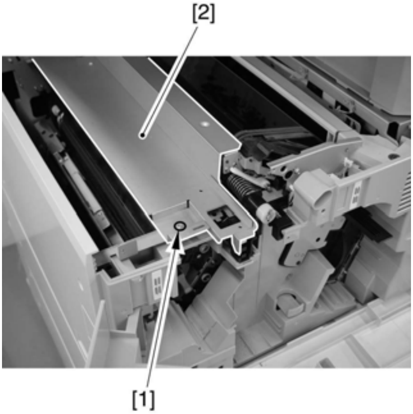
1) Remove the screw [1], and detach the waste toner unit retainer [2]; then, detach the ITB waste toner unit [3].



F-7-65

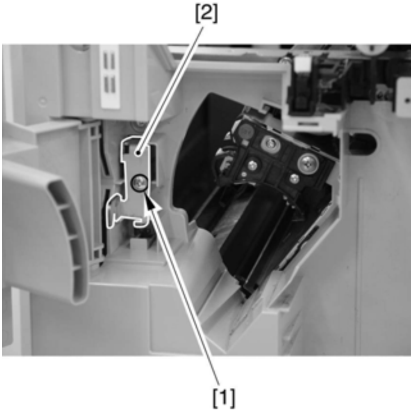
7.10.2.5 Removing the Developing Unit

1) Remove the screw [1], and detach the protective plate [2].



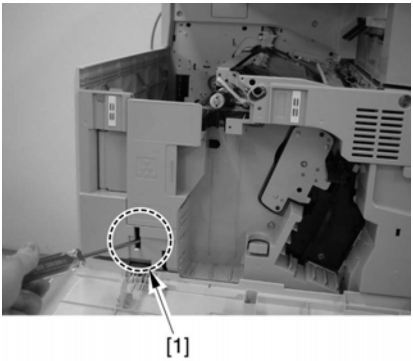
F-7-66

2) Remove the screw [1], and detach the rotary fixing plate [2]. If you are removing the black developing unit, you may skip this step, as the rotary fixing plate is not needed for the unit.

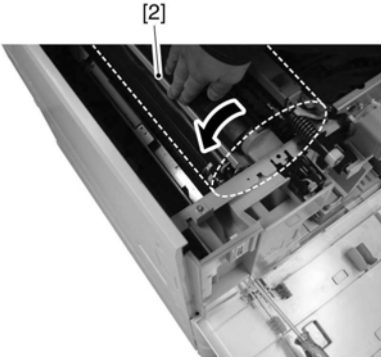


F-7-67

3) Close the toner cartridge access cover, and insert a screwdriver through the angular hole [1]; turn the developing rotary [2] counterclockwise slowly by hand so that the desired developing unit is at the point of replacement. When the cartridge reaches its point of replacement, the developing rotary will be fixed in place by the work of the rotary fixing arm.

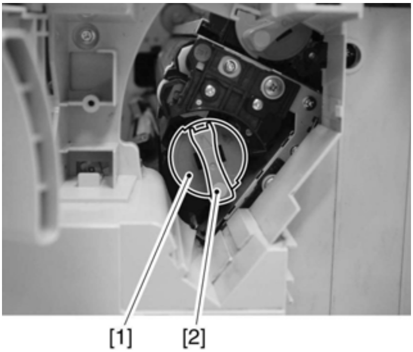


F-7-68



F-7-69

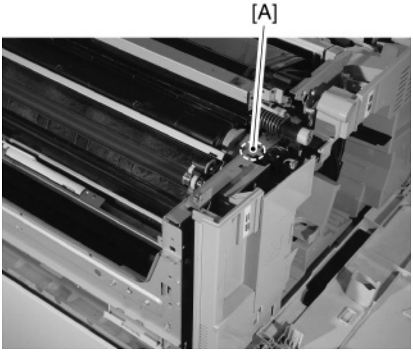
4) Open the toner cartridge access cover, and turn the knob [2] of the toner cartridge [1] counterclockwise until it stops; then, pull out the toner cartridge [1] to the front to detach.



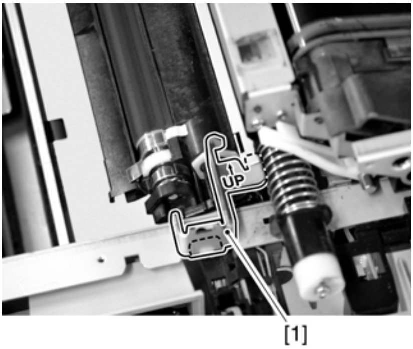
F-7-70

When removing the toner cartridge, work with care so that the toner will not spill around the toner cartridge replacement mouth.

5-1) In the case of a color developing unit (Y, M, or C), move the developing assembly rotary to the point of replacement, and fix it in place using the rotary fixing plate you have previously removed. Fit the rotary fixing plate [1] so that the UP marking on it faces up.

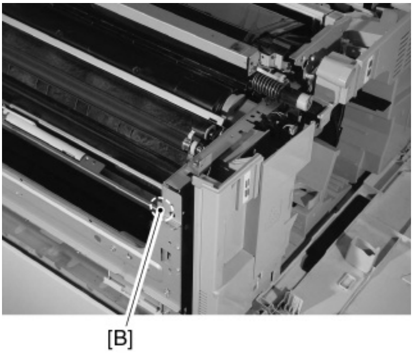


F-7-71

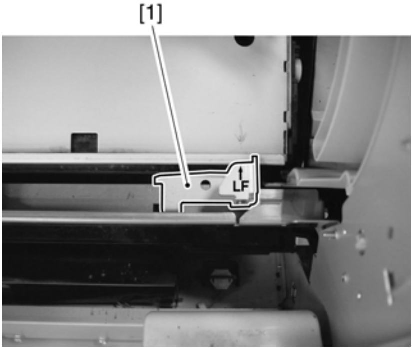


F-7-72

5-2) If you are removing a developing unit with the Finisher-P1 connected, fit the rotary fixing plate [1] where shown [B] to fix the developing rotary in place. Be sure that the rotary fixing plate [1] is fitted so that the LF marking faces up.



F-7-73

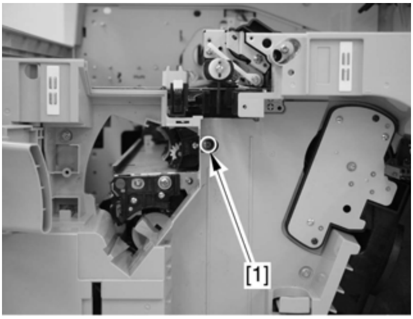


F-7-74

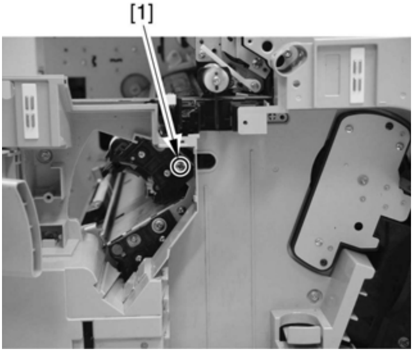
Memo:
The point of replacement for the developing unit (Bk) is the same as that of the toner cartridge (Bk), freeing you from the need to perform steps 5-1) and 5-2).

---

6) Remove the screw [1]. Keep in mind that in the case of a color developing unit (Y, M, or C), a different screw [1] is removed, depending on where the developing rotary is fixed in place.

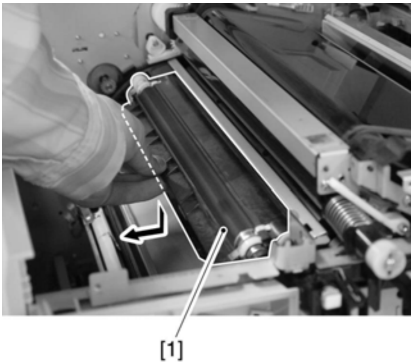


F-7-75



F-7-76

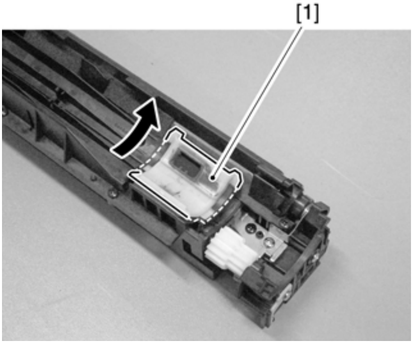
7) Remove the developing unit [1].



F-7-77

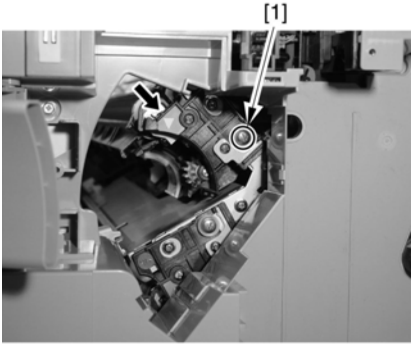
7.10.2.6 Points to Keep in Mind When Fitting the Developing Unit

- Before starting the work, check to be sure that the shutter [1] is forced in the direction of the arrow. If not, move it in the direction of the arrow until it butts against the shutter [1]. If it is not fully butted against the shutter, you may not be able to fit the toner cartridge correctly.



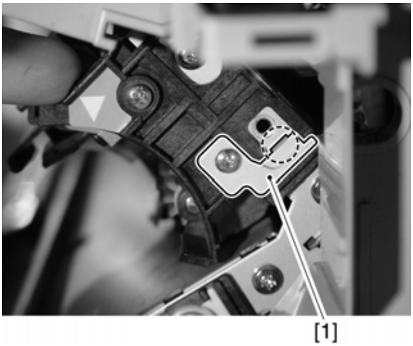
F-7-78

- When fixing the developing unit using a screw [1], be sure to force the casing of the developing unit in the direction of the arrow as you tighten the screw. After tightening the screw, try pushing the casing of the developing unit in the direction of the arrow to make sure that there is play of about 1.5 to 2 mm. If there is no play, remove the screw [1], and tighten it while forcing the casing of the developing unit in the direction of the arrow.



F-7-79

Memo:
This step is performed so that the screw base will not ride over the developing cartridge guide plate [1]. If you tighten the screw while it rides over the guide plate, the spatial relationship between the photopositive drum and the developing cylinder will be wrong, causing blank output.



F-7-80

7.10.2.7 After Replacing the Developing Unit (Y, M, C)

1) Execute the following service mode item (color):

- COPIER> FUNCTION> INSTALL> STIR-Y/M/C

2) Execute the following service mode item (color):

- COPIER> FUNCTION> INSTALL> INIT-Y/M/C (If you have replaced the Y, M, and C cartridges at the same time, execute INIT-3.)

3) Execute the following service mode item (color):

- COPIER> FUNCTION> INSTALL> SPLY-Y/M/C

4) Record the value for the following service mode item (color) on the service label:

- COPIER> ADJUST> DENS> SGNL-Y/M/C
- COPIER> ADJUST> DENS> REF-Y/M/C

5) Execute 'Full Adjust' of auto gradation correction in Additional Function.

7.10.2.8 After Replacing the Developing Unit (Bk)

1) Execute the following service mode item:

- COPIER> FUNCTION> INSTALL> STIR-K

2) Execute the following service mode item:

- COPIER> FUNCTION> INSTALL> SPLY-K

3) Execute the following service mode item; thereafter, check to see that the value has been initialized to '0':

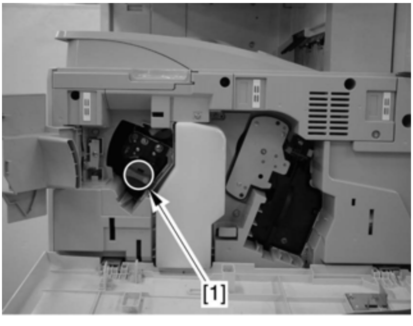
- COPIER> COUNTER> MISC> DV-UNT-K

4) Execute 'Full Adjust' of auto gradation correction in Additional Function.

7.10.3 Rotary Upper Cover

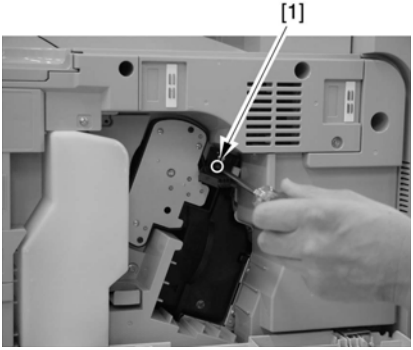
7.10.3.1 Removing the Drum Unit

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



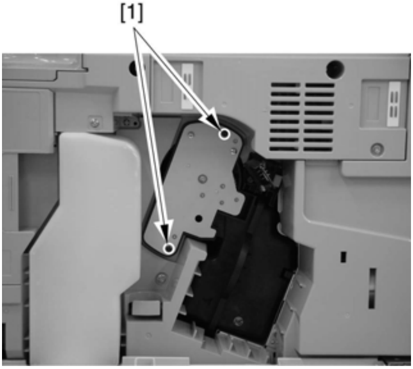
F-7-81

2) Remove the screw [1] (black; M3x20).



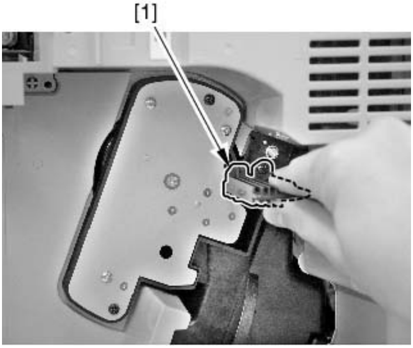
F-7-82

3) Remove the 2 fixing screws [1] (M4x20).

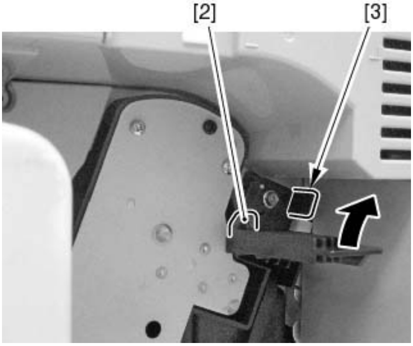


F-7-83

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

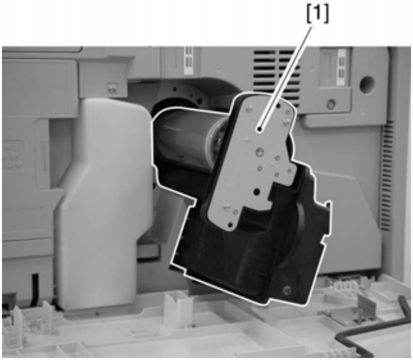


F-7-84



F-7-85

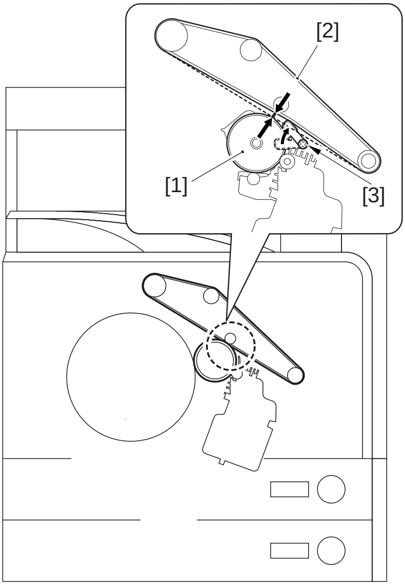
5) Slide out the drum unit [1] to the front to detach.



F-7-86

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



F-7-87

At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

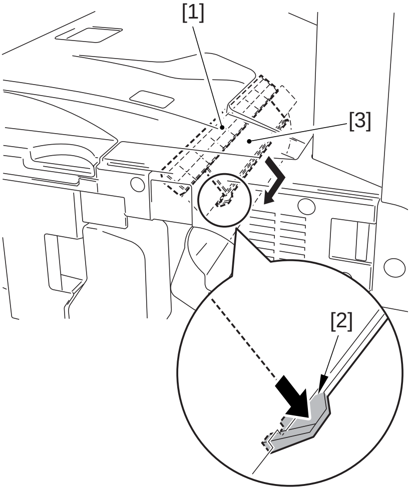
⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.3.2 Removing the Rotary Upper Cover

⚠The ITB is located immediately above the rotary upper cover. Take full care not to touch the ITB when removing the rotary upper cover. If you inadvertently touched it, be sure to execute ITB cleaning in service mode: COPIER>FUNCTION>CLEANING>TBLT-CLN.

---

1) Free the claw [2] found at the front of the rotary upper cover [1]; then, hold the center [3] of the rotary upper cover [1], and detach it in the direction of the arrow.

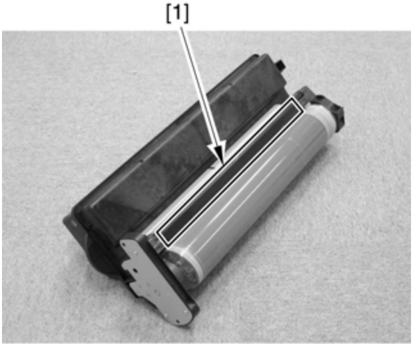


F-7-88

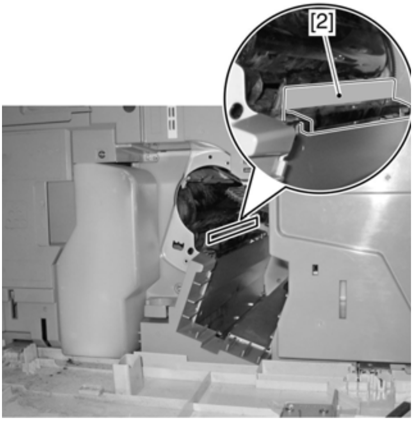
7.10.3.3 Points to Note When Mounting the Drum Unit

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-89



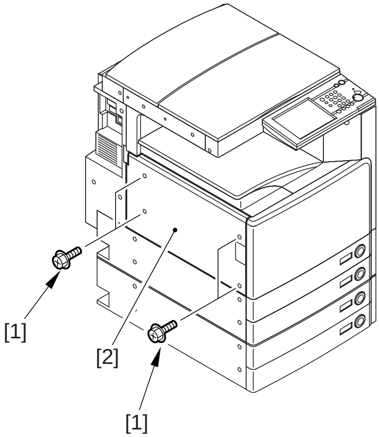
F-7-90

Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.4 Rotary Lower Cover

7.10.4.1 Removing the Left Cover

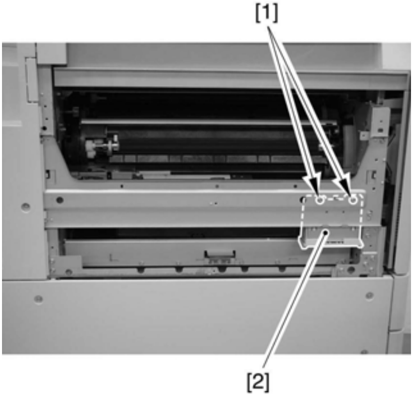
1) Remove the 4 screws [1], and detach the left cover [2].



F-7-91

7.10.4.2 Removing the Left Grip (front)

1) Remove the 2 screws [1], and detach the left grip (front) [2].

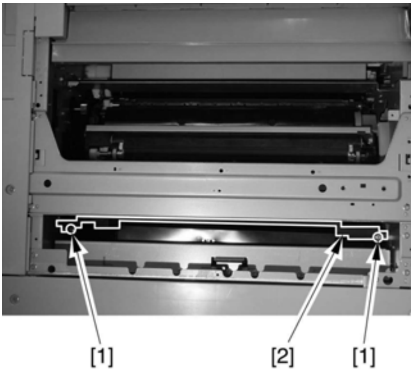


F-7-92

7.10.4.3 Removing the Rotary Lower Cover

1) Open the front cover.

2) Remove the 2 screws [1]; then, pull the rotary lower cover [2] to the front to detach.



F-7-93

7.10.5 ITB Cleaning Unit

7.10.5.1 Preparing for the Removal of the ITB Cleaning Unit

1) Turn on the main power switch.
2) Make the following selections in service mode, and press the OK key:

- COPIER>FUNCTION>MISC-P>ITB-CLSW

While the mode is being executed, the screen flashes 'ACTIVE'; it changes to 'OK!' at the end of the execution.

3) Turn off the control panel power switch; then, wait for 15 sec or more, and turn off the main power switch.

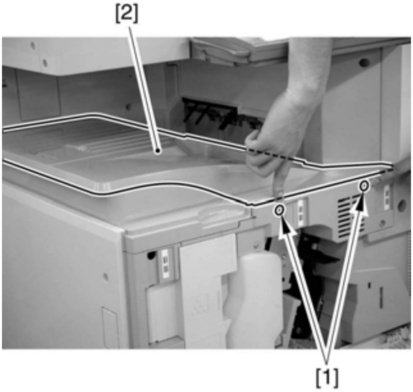
Memo:

The machine operates as follows in response to the execution of this service mode:

- it changes the position of the developing assembly rotary. (If the developing cylinder is positioned immediately under the ITB cleaning unit, the base of the ITB cleaning unit can rub against the surface of the developing cylinder to cause damage. The developing assembly rotary is rotated so that the Bk toner cartridge is positioned immediately under the ITB cleaning unit.)
- if a Finisher-P1 is installed, the finisher delivery tray is moved as far up as it moves. (If the finisher delivery tray is in down position, mounting the ITB cleaning unit can prove to be difficult.)

7.10.5.2 Removing the Delivery Tray

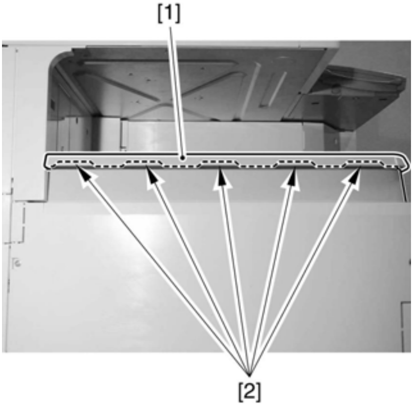
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-94

⚠Points to Note When Mounting the Delivery Tray

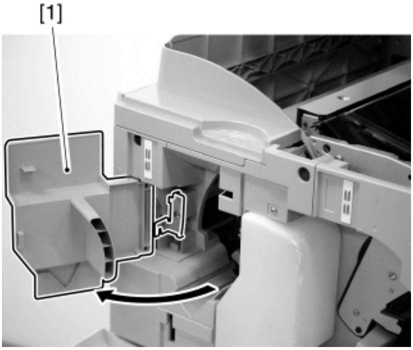
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-95

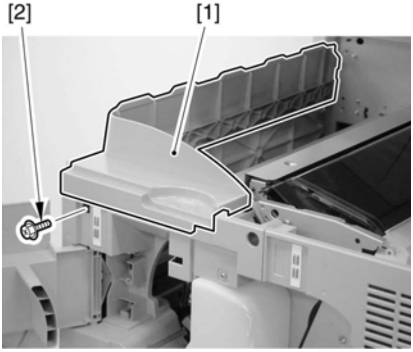
7.10.5.3 Removing the Delivery Tray Lower Cover

1) Open the toner cartridge access cover [1].



F-7-96

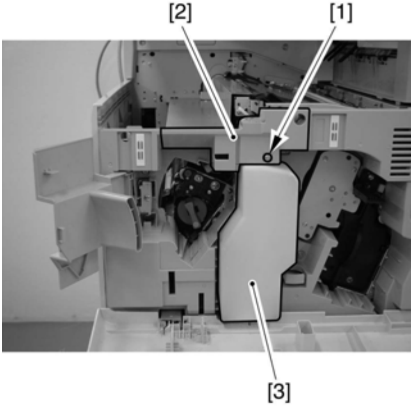
2) Remove the screw [2], and detach the delivery tray lower cover [1].



F-7-97

7.10.5.4 Removing the ITB Waste Toner Unit

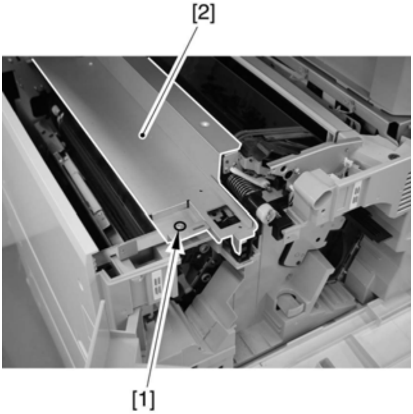
1) Remove the screw [1], and detach the waste toner unit retainer [2]; then, detach the ITB waste toner unit [3].



F-7-98

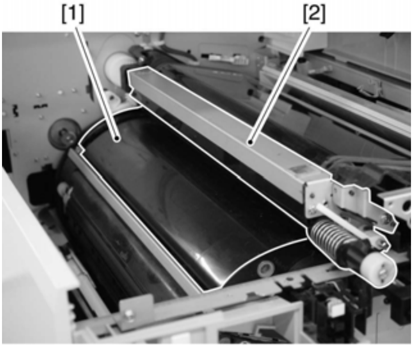
7.10.5.5 Removing the ITB Cleaning Unit

1) Remove the screw [1], and detach the protective plate [2].



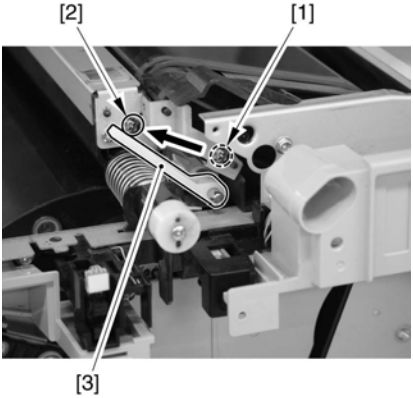
F-7-99

2) Check to be sure that the toner cartridge (Bk) [1] is positioned under the ITB cleaning unit [2]. If not, turn the developing assembly rotary by hand so that the toner cartridge (Bk) moves to a point immediately under the ITB cleaning unit.



F-7-100

3) Remove the screw [1], and fit the screw to the screw hole [2].

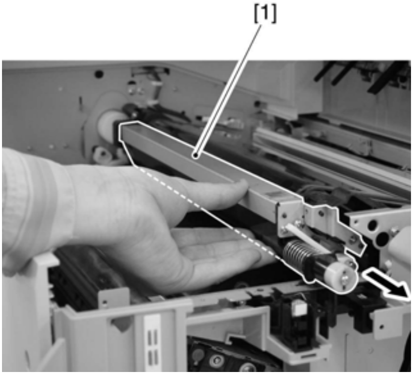


F-7-101

Memo:
To fix the arm [3] in place, fit the screw in the screw hole [2].
If the arm is not fixed in place, the cleaning blade will come into contact with the ITB when the ITB cleaning unit is removed,

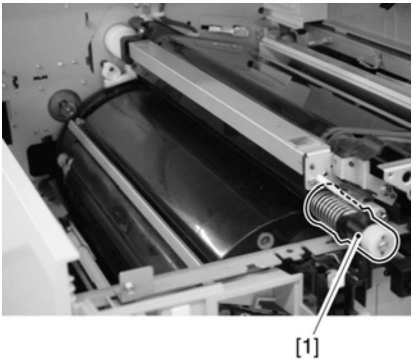
damaging the ITB.

4) Slide out the ITB cleaning unit [1] to the front to detach.



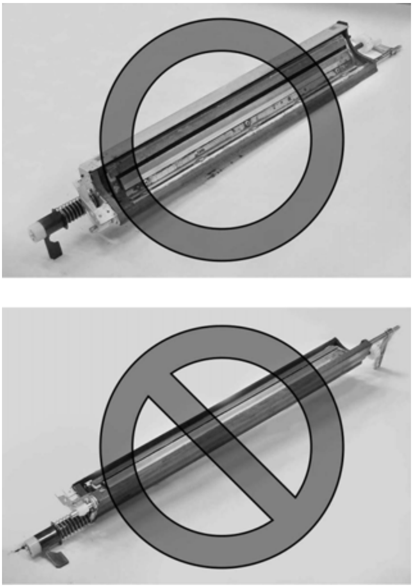
F-7-102

⚠When removing the ITB cleaning unit, take care not to impose excess force on the nozzle area [1] of the unit; otherwise, the area can suffer damage.



F-7-103

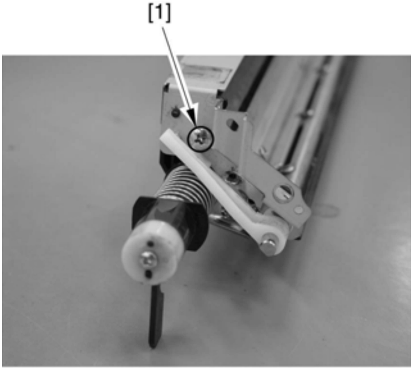
⚠If you have to place the ITB cleaning unit on the floor after removing it from the machine, be sure to orient it as shown (i.e., so that the releasing arm is parallel with the floor); otherwise, the waste toner inside the ITB cleaning unit can start to leak.



F-7-104

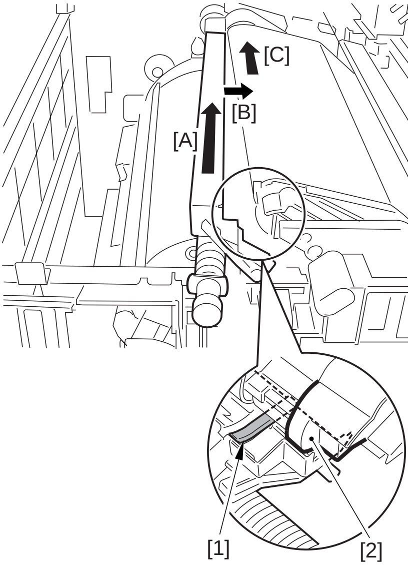
7.10.5.6 Points to Note When Mounting the ITB Cleaning Unit

- Be sure that the screw [1] is fitted to the ITB cleaning unit before mounting the ITB cleaning unit to the machine. Otherwise, the ITB cleaning blade will remain in contact with the ITB, damaging the ITB when the ITB cleaning unit is being mounted.

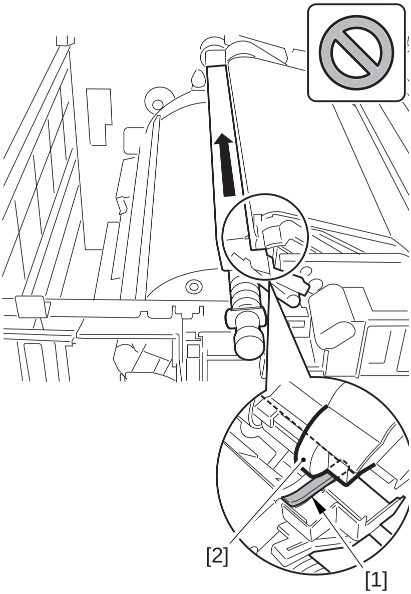


F-7-105

- When carelessly attaching the ITB cleaning unit to the main body, the end seal [1] may be tilted to clash the ITB unit guide assembly [2] (the surface indicated by a heavy line in the figure), and the seal may get deformed or removed. This damage on the seal may result in scattering of the waste toner inside the machine. To prevent this scattering, attach the ITB cleaning unit in the following steps: [A] Slant the front edge of the ITB cleaning unit toward the left, and insert the ITB cleaning unit toward the rear side of the machine temporally; [B] Move the unit until it becomes parallel to the ITB, ensuring that the end seal [1] does not clash the ITB unit guide assembly [2] (the surface indicated by a heavy line in the figure); [C] Push the unit straight to the rear side of the machine.

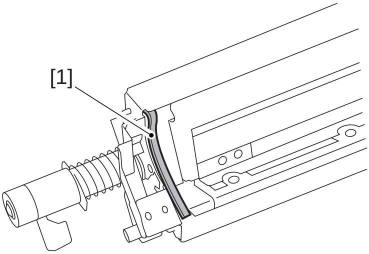


F-7-106

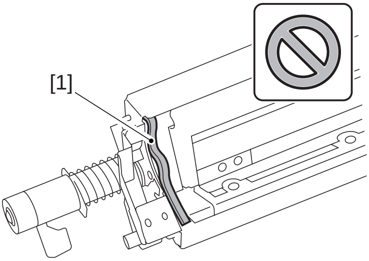


F-7-107

Memo: The figures below show the end seal [1] in normal condition and the one in abnormal condition (upward-tilted one).

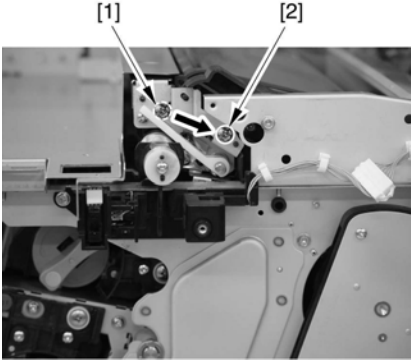


F-7-108



F-7-109

- After mounting the ITB cleaning unit to the machine, be sure to put back the screw [1] where the screw [2] is found. Otherwise, there will be a gap to the ITB cleaning blade, preventing cleaning of the ITB.

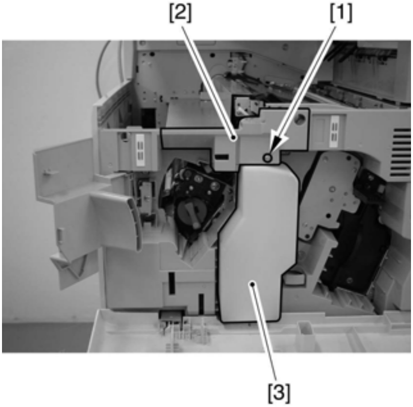


F-7-110

7.10.6 ITB Waste Toner Unit

7.10.6.1 Removing the ITB Waste Toner Unit

1) Remove the screw [1], and detach the waste toner unit retainer [2]; then, detach the ITB waste toner unit [3].

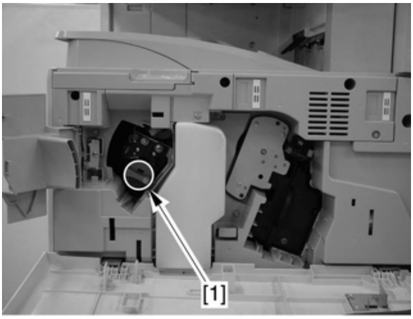


F-7-111

7.10.7 Intermediate Transfer Unit

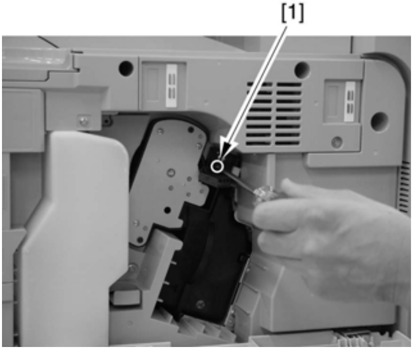
7.10.7.1 Removing the Drum Unit

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



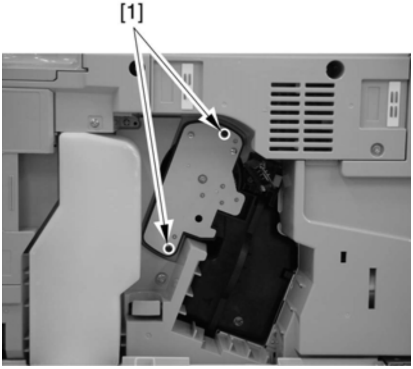
F-7-112

2) Remove the screw [1] (black; M3x20).



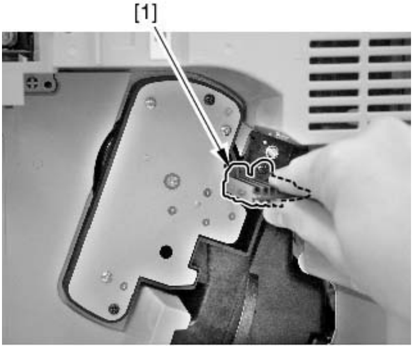
F-7-113

3) Remove the 2 fixing screws [1] (M4x20).

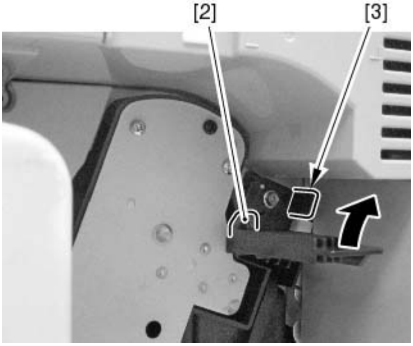


F-7-114

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

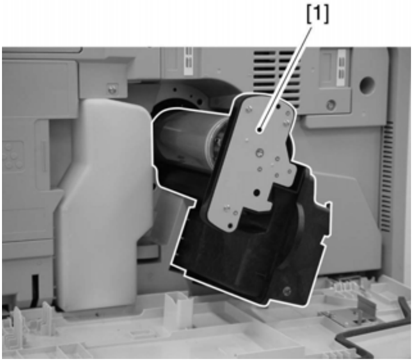


F-7-115



F-7-116

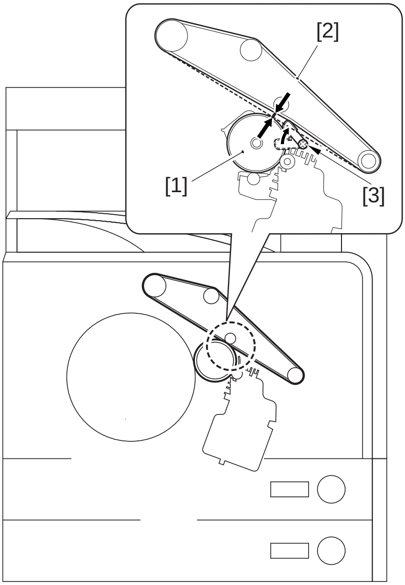
5) Slide out the drum unit [1] to the front to detach.



F-7-117

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



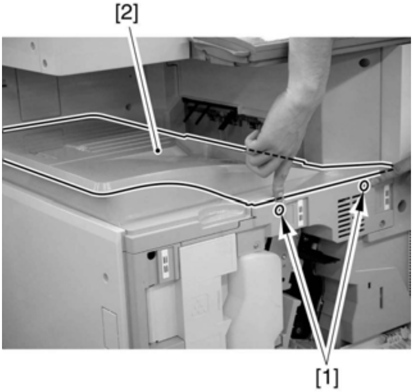
F-7-118

At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.7.2 Removing the Delivery Tray

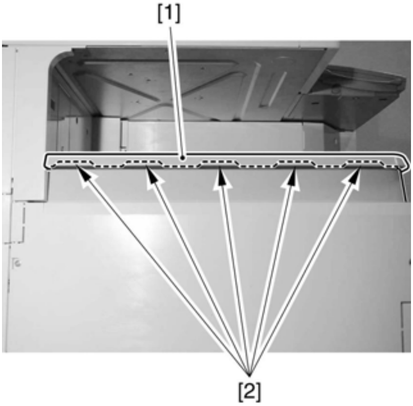
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-119

⚠Points to Note When Mounting the Delivery Tray

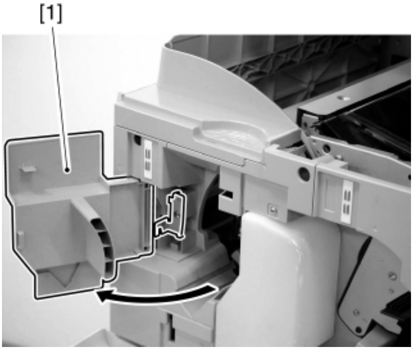
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-120

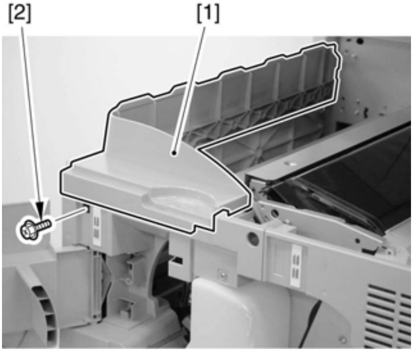
7.10.7.3 Removing the Delivery Tray Lower Cover

1) Open the toner cartridge access cover [1].



F-7-121

2) Remove the screw [2], and detach the delivery tray lower cover [1].

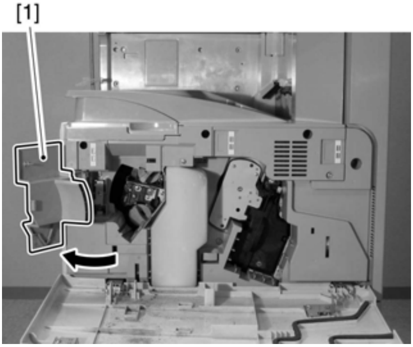


F-7-122

7.10.7.4 Removing the waste toner unit retainer

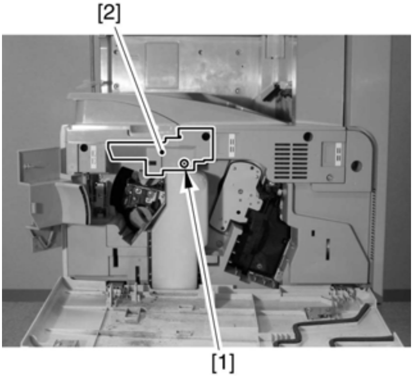
1) Open the front cover.

2) Open the toner container access cover [1].



F-7-123

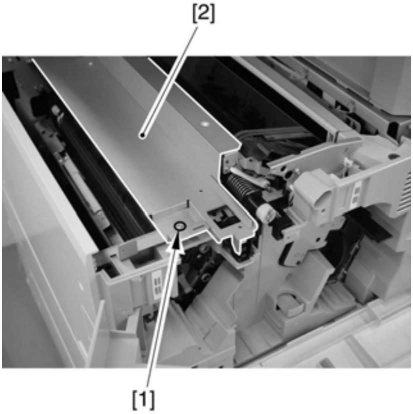
3) Remove the TP screw [1], and detach the waste toner unit retainer [2].



F-7-124

7.10.7.5 Removing the protective plate

1) Remove the screw [1], and detach the protective plate [2].

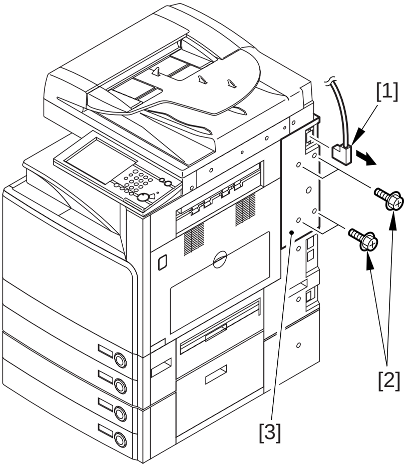


F-7-125

7.10.7.6 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

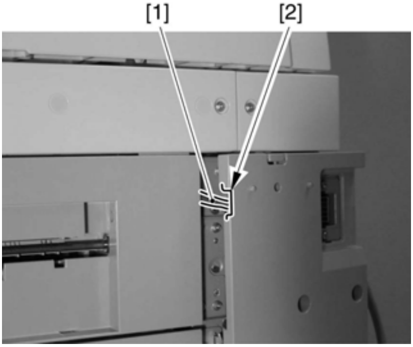
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-126

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

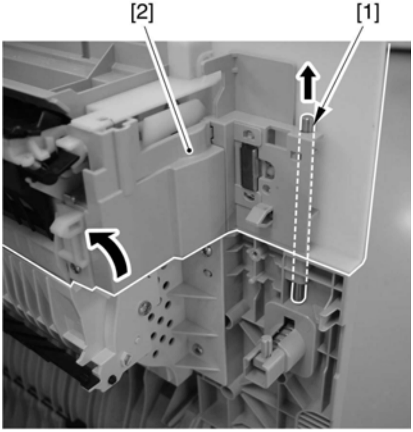


F-7-127

7.10.7.7 Removing the Right Door

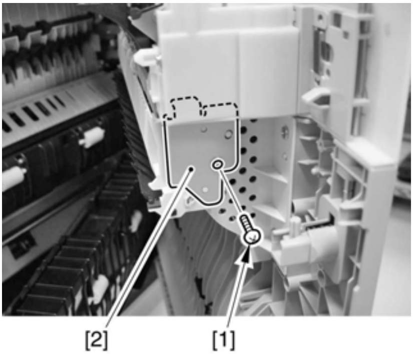
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-128

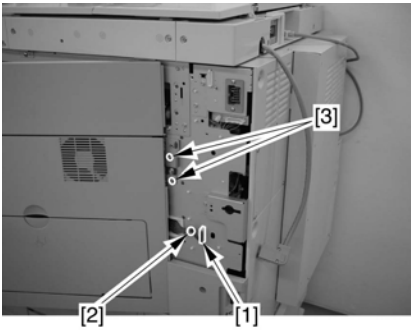
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-129

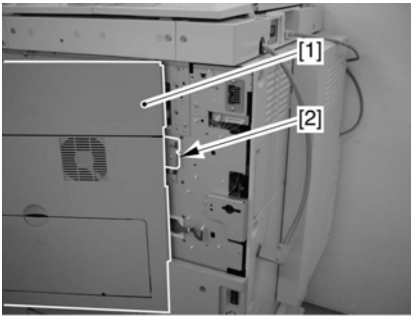
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-130

6) Detach the right door [1] together with the hinge [2].

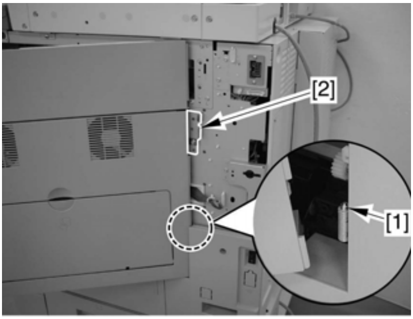


F-7-131

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

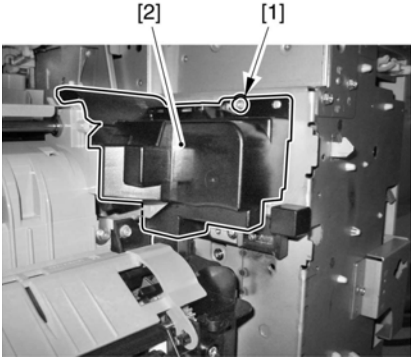


F-7-132

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

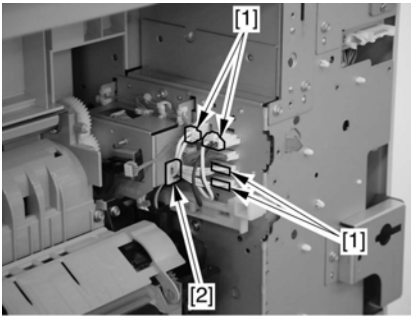
7.10.7.8 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



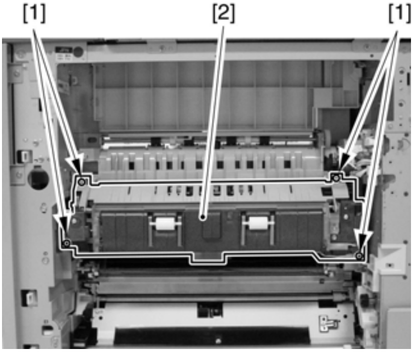
F-7-133

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-134

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-7-135

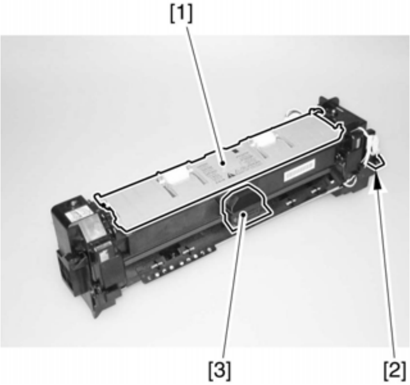
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠Placing the Fixing Assembly

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-7-136

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

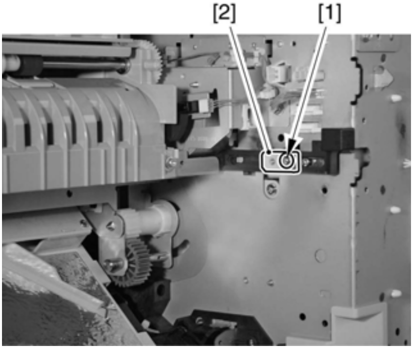
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

7.10.7.9 Removing the Fixing Release Arm Plate

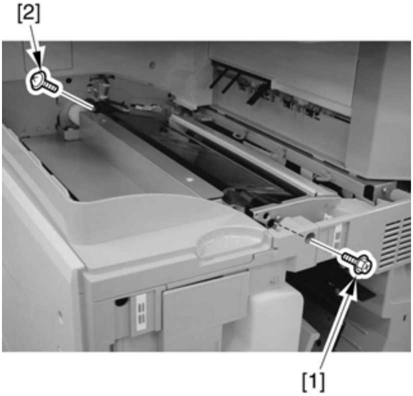
1) Remove the screw [1], and detach the plate [2].



F-7-137

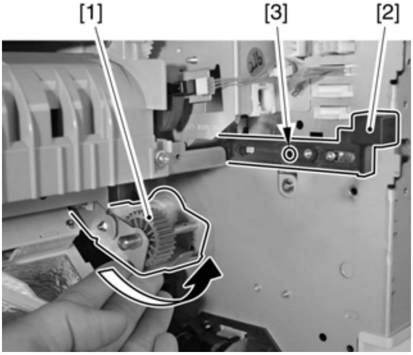
7.10.7.10 Removing the Intermediate Transfer Unit (ITB unit)

1) Remove the screw [1], and remove the screw [2].

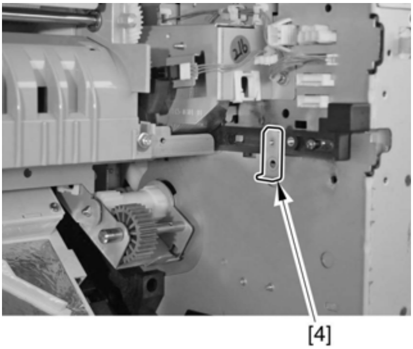


F-7-138

2) With the fixing drive gear assembly [1] fully lifted in the direction of the arrow, fit the previously removed fixing release arm plate [4] into the hole of the fixing release arm [2] to hold the fixing drive gear assembly [1] in place.



F-7-139



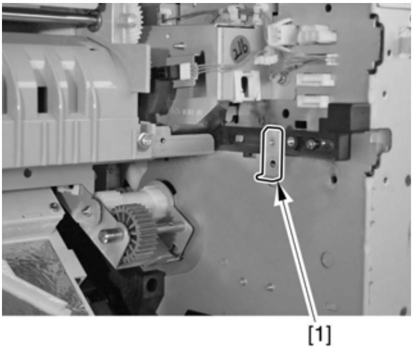
F-7-140

Memo:
Step 2) is performed so that the ITB unit and the fixing drive gear assembly will not interfere with each other when the ITB unit is removed.

⚠Be sure to put back the fixing release arm plate used to hold the fixing drive gear assembly in place as follows when mounting the ITB unit:

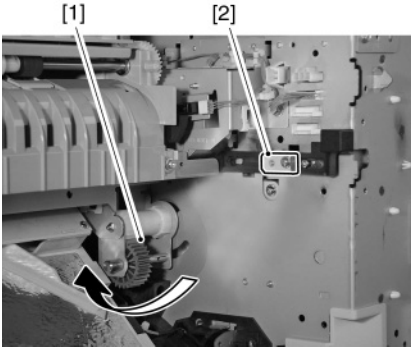
1) If you have attached the delivery tray, remove it for the time being.
If the fixing release arm plate is mounted in the presence of the delivery tray, the fixing release arm (rear) will get stuck on the boss of the delivery tray, preventing transmission of drive to the fixing roller.

2) Remove the fixing release arm plate [1] so that the fixing drive gear assembly will be freed.



F-7-141

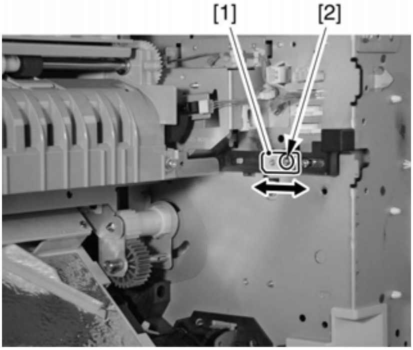
3) With the fixing drive gear assembly [1] fully moved by hand in the direction of the arrow, fit the fixing releasing arm plate [2] in to the hole to secure it in place.



F-7-142

4) Fix the fixing releasing arm plate [1] in place using a screw [2]. Thereafter, try moving the fixing release arm back and forth to be sure that the fixing drive gear

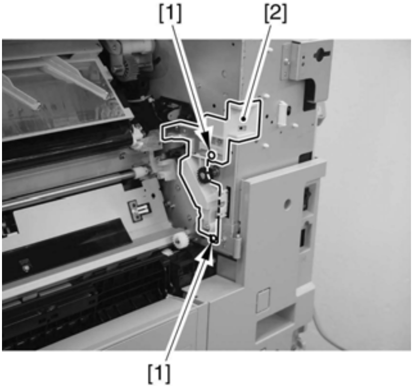
assembly moves in response.



F-7-143

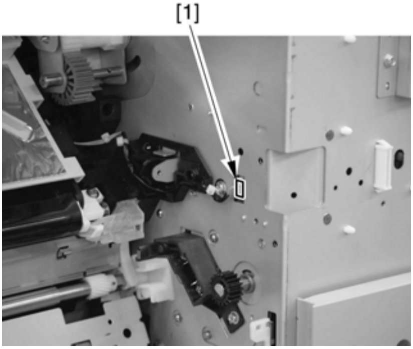
---

3) Remove 2 screws [1], and detach the contact guide [2].



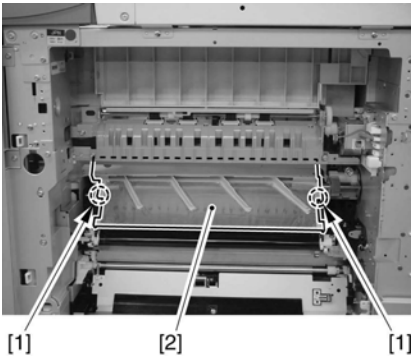
F-7-144

4) Disconnect the connector [1], and free the cable from the cable guide.



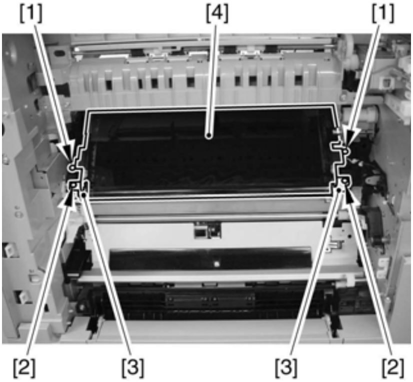
F-7-145

5) Lift the 2 points of the ITB fan duct [1] to free the claw; then, detach the ITB fan duct [2].



F-7-146

6) Remove the 2 screws [1] (TP; M3x6) and the 2 screws [2] (binding; M4x14); then, lift the 2 grips [3] to detach from the bushing assembly, and detach the ITB unit



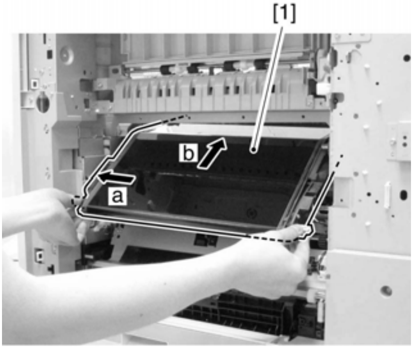
F-7-147

⚠When removing the ITB unit, be sure to take full care not to touch or damage the ITB. When you have removed the ITB unit, try not to place it on the floor or a desk without paper under it.

⚠If you must leave the ITB unit alone for a long time after removing it, be sure to cover the surface of the photosensitive drum to protect it against light.

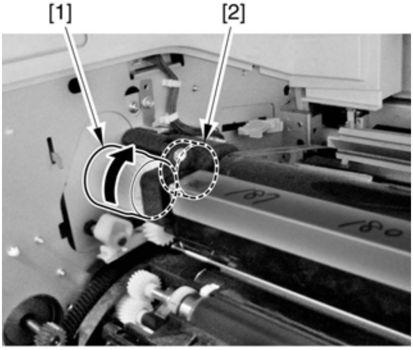
7.10.7.11 Points to Note When Mounting the ITB Unit

- When fitting the ITB unit [1] in the machine, move the unit in the direction of the arrow a (toward the machine front) and then along the rails in the direction of the arrow b.



F-7-148

- When you have fitted the ITB unit in the machine, be sure to give the gear [1] a full turn before tightening the screw to fix it in place. Merely fitting the ITB unit in the machine does not always mean that the gear [1] and the other gear [2] have fully been engaged; the turn will mesh them correctly.

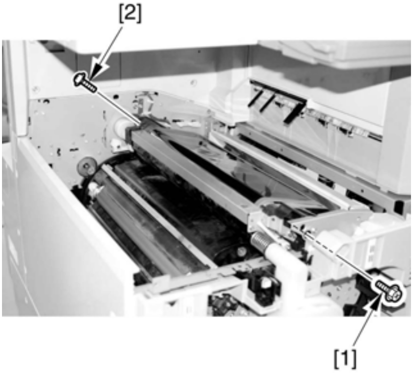


F-7-149

- The gear [1] above is coated with grease; the gear [2] is also coated with grease. If the grease adheres to your hand when rotating the gears, immediately wash your hands. You must not touch the ITB with your hand having the grease on.

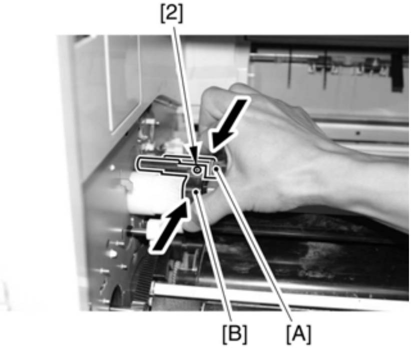
- Follow the steps below to tighten the screws on the ITB unit.

1) Tighten 1 screw [1], and then temporarily tighten 1 screw [2].



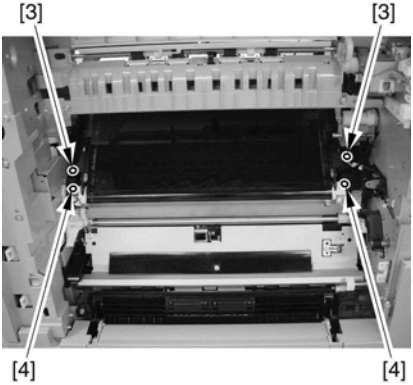
F-7-150

2) Use your fingers to pinch the ITB unit frame [A] and the ITB unit support part [B] in the direction of an arrow, so that there will be no looseness between them. Keep them as they are, and tighten the screw [2].



F-7-151

3) Attach 2 screws [3] (TP screw; M3x6) and 2 screws [4] (binding screw; M4x14). There is no specific order for attaching the two types of screw (i.e., screw [3] and [4]). Therefore, it is possible to attach either of them first.



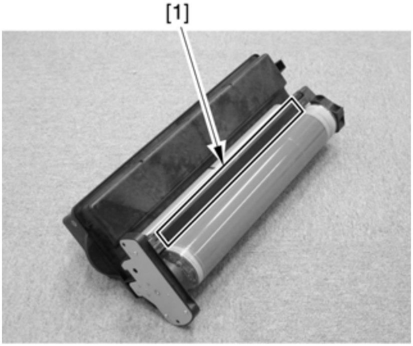
F-7-152

⚠ When failing to follow the proper procedure (Step 2) above) before tightening the screw [2], the rear side of the ITB cleaning blade may not be in complete contact with the ITB, leading to faulty cleaning. Moreover, when failing to attach the screw [1] and the screw [2] in the correct order (i.e., screw [1] => screw [2]), some lines (96.7mm pitch) may appear on the images.

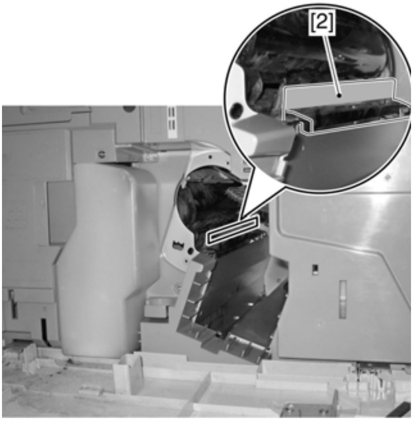
7.10.7.12 Points to Note When Mounting the Drum Unit

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-153



F-7-154

Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.7.13 After Replacing the Intermediate Transfer Unit

Execute the following service mode item:

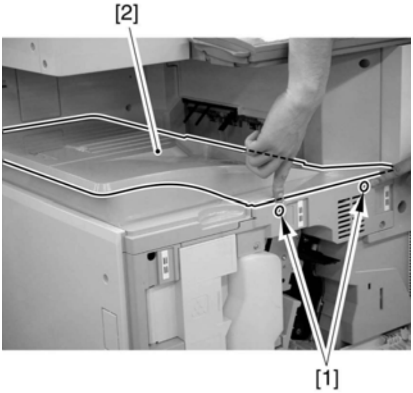
- COPIER>FUNCTION>MISC-P>1ATVC-EX

7.10.8 ITB Waste Toner Detection Unit

7.10.8.1 Removing the Delivery Tray

1) Open the front cover.

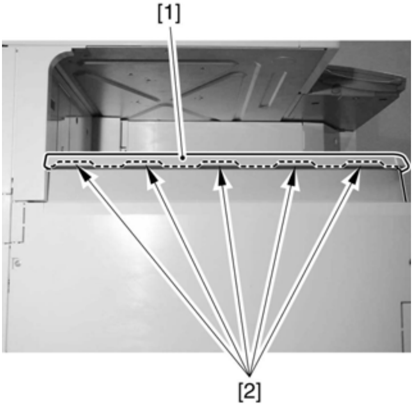
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-155

⚠Points to Note When Mounting the Delivery Tray

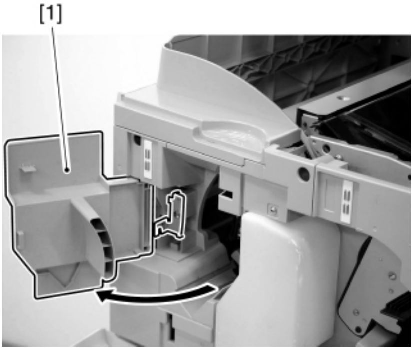
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-156

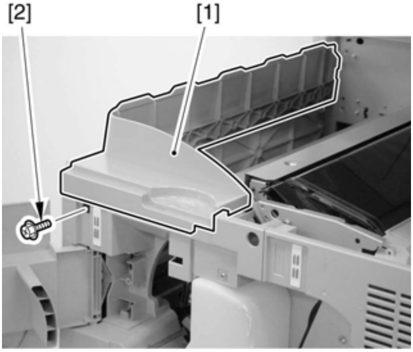
7.10.8.2 Removing the Delivery Tray Lower Cover

1) Open the toner cartridge access cover [1].



F-7-157

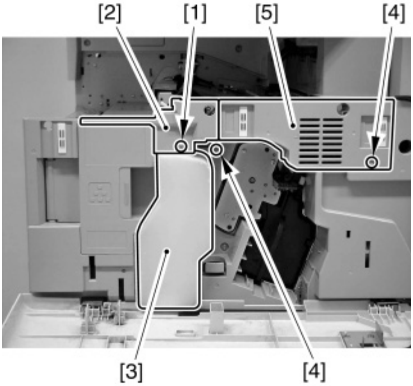
2) Remove the screw [2], and detach the delivery tray lower cover [1].



F-7-158

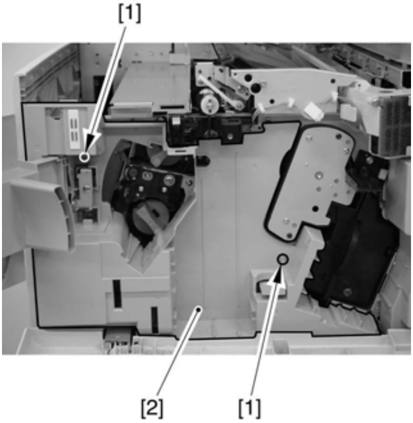
7.10.8.3 Removing the ITB Waste Toner Detection Unit

1) Remove the screw [1], and detach the waste toner unit retainer [2] and the ITB waste toner unit [3]; then, remove the two screws [4], and detach the inside cover (middle) [5].



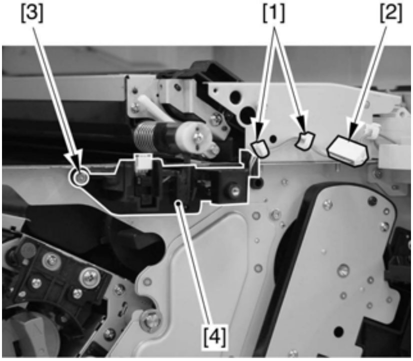
F-7-159

2) Remove the 2 screws [1], and detach the inside cover (left) [2].



F-7-160

3) Free the cable from the 2 cable clamps [1]; then, disconnect the connector [2], remove the screw [3], and detach the ITB waste toner detention unit [4].

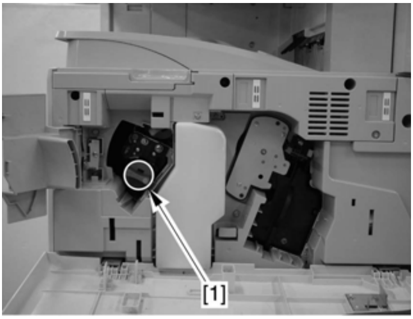


F-7-161

7.10.9 Intermediate Transfer Belt

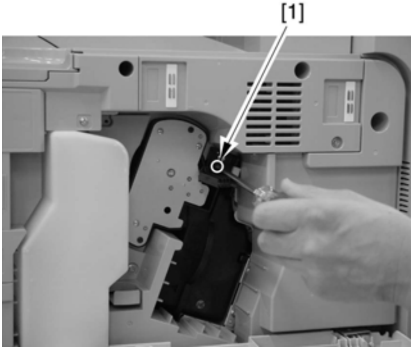
7.10.9.1 Removing the Drum Unit

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



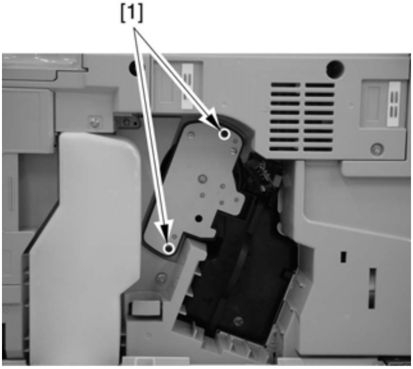
F-7-162

2) Remove the screw [1] (black; M3x20).



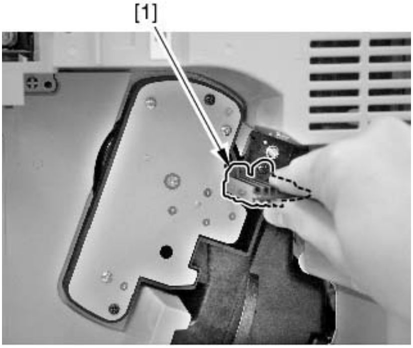
F-7-163

3) Remove the 2 fixing screws [1] (M4x20).

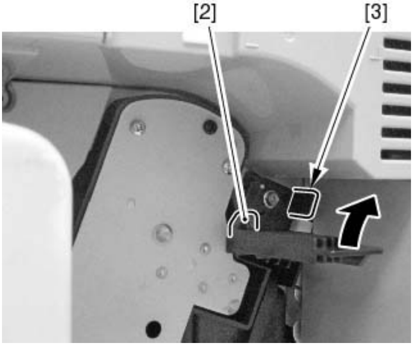


F-7-164

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

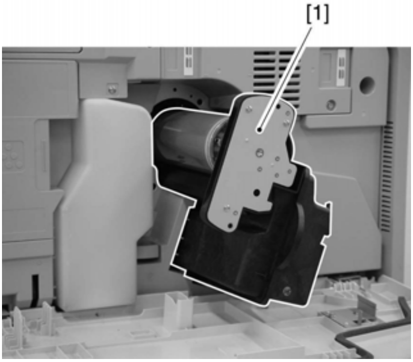


F-7-165



F-7-166

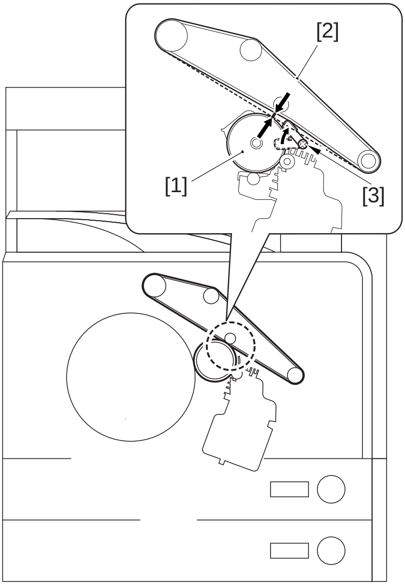
5) Slide out the drum unit [1] to the front to detach.



F-7-167

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



F-7-168

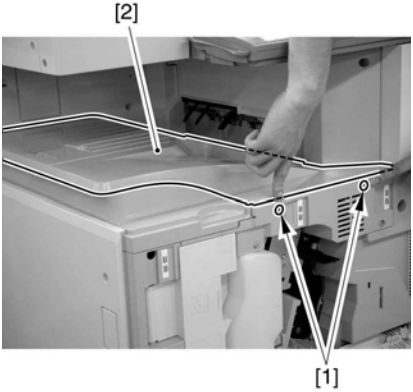
At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.9.2 Removing the Delivery Tray

1) Open the front cover.

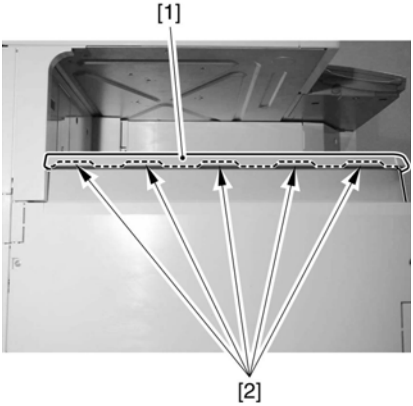
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-169

Points to Note When Mounting the Delivery Tray

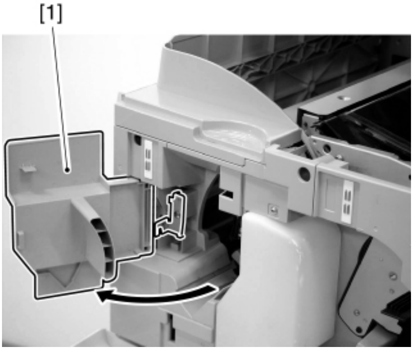
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-170

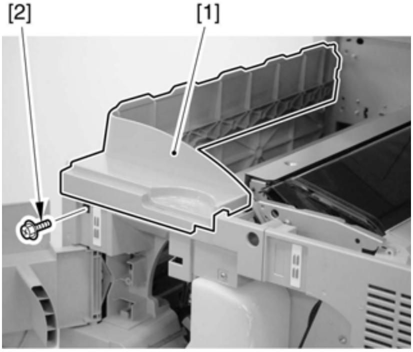
7.10.9.3 Removing the Delivery Tray Lower Cover

1) Open the toner cartridge access cover [1].



F-7-171

2) Remove the screw [2], and detach the delivery tray lower cover [1].

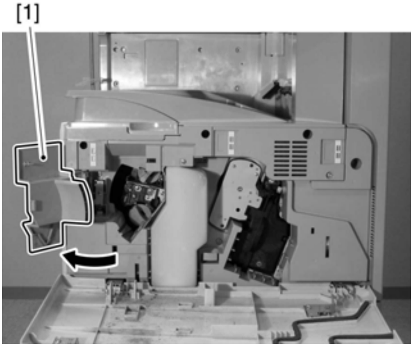


F-7-172

7.10.9.4 Removing the waste toner unit retainer

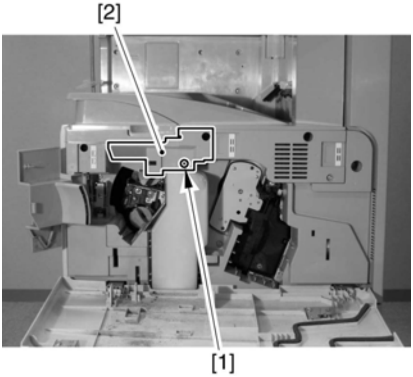
1) Open the front cover.

2) Open the toner container access cover [1].



F-7-173

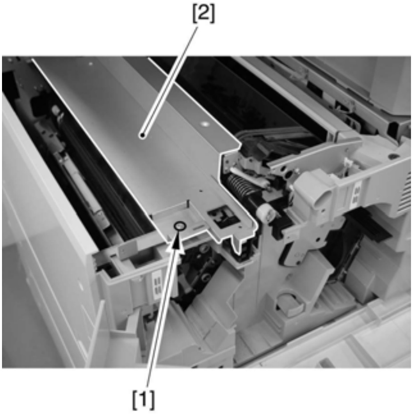
3) Remove the TP screw [1], and detach the waste toner unit retainer [2].



F-7-174

7.10.9.5 Removing the protective plate

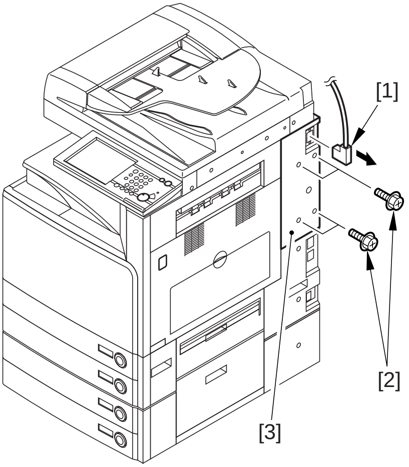
1) Remove the screw [1], and detach the protective plate [2].



F-7-175

7.10.9.6 Removing the Right Cover (upper rear)

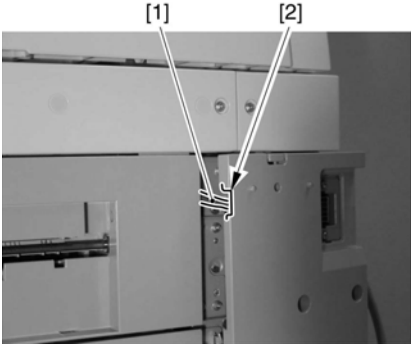
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-176

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

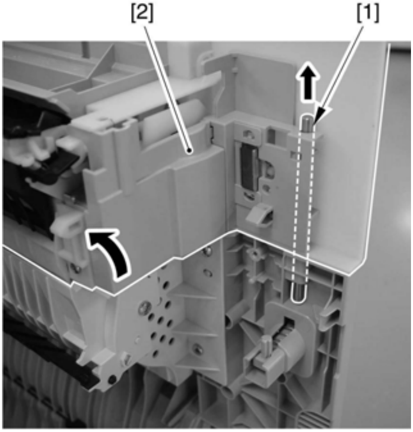
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-7-177

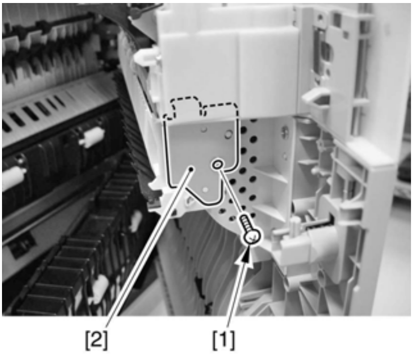
7.10.9.7 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-178

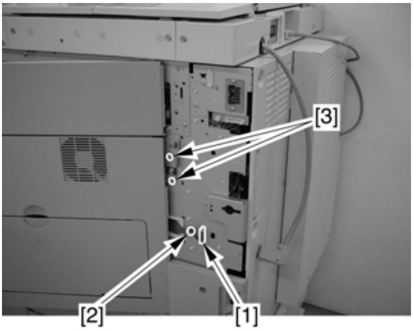
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-179

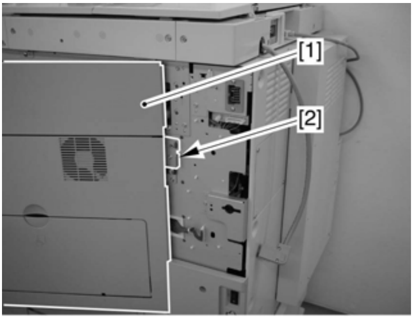
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-180

6) Detach the right door [1] together with the hinge [2].

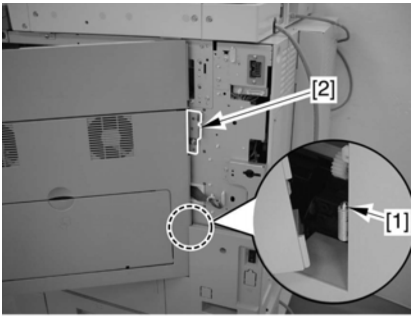


F-7-181

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

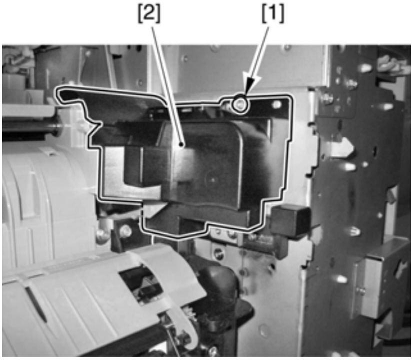


F-7-182

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

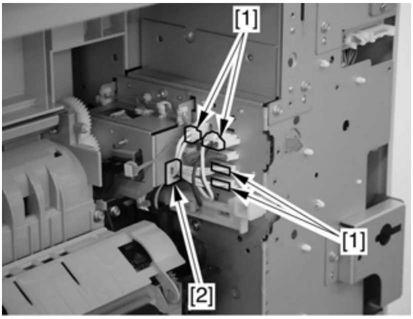
7.10.9.8 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



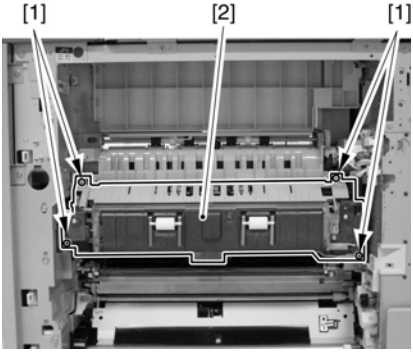
F-7-183

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-184

3) Remove the 4 screws [1], and detach the fixing assembly [2].



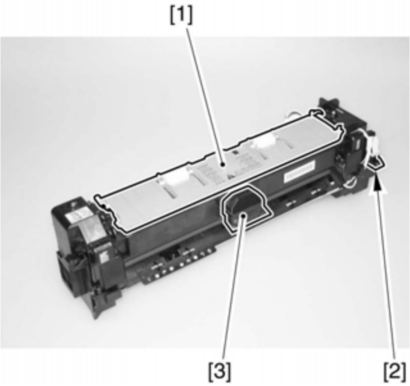
F-7-185

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.

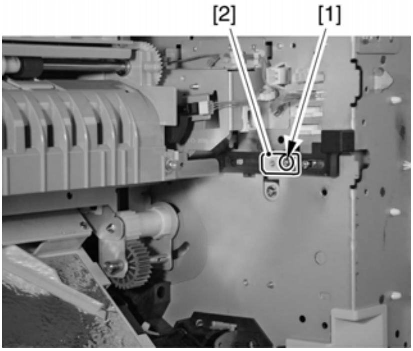


F-7-186

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

7.10.9.9 Removing the Fixing Release Arm Plate

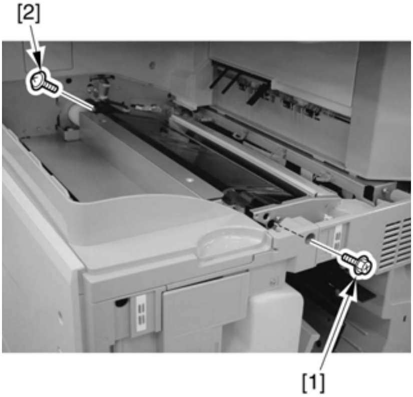
1) Remove the screw [1], and detach the plate [2].



F-7-187

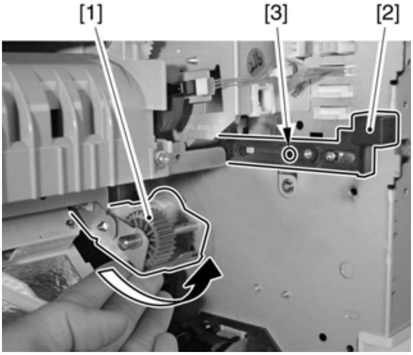
7.10.9.10 Removing Intermediate Transfer Unit (ITB unit)

1) Remove the screw [1], and remove the screw [2].

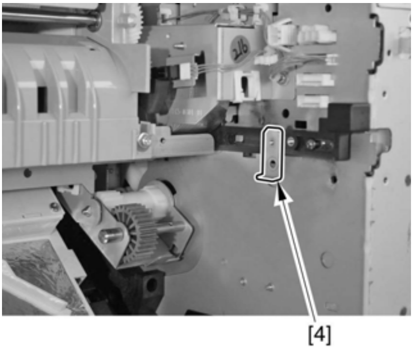


F-7-188

2) With the fixing drive gear assembly [1] fully lifted in the direction of the arrow, fit the previously removed fixing release arm plate [4] into the hole of the fixing release arm [2] to hold the fixing drive gear assembly [1] in place.



F-7-189



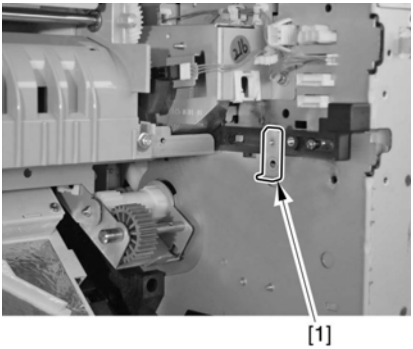
F-7-190

Memo:
Step 2) is performed so that the ITB unit and the fixing drive gear assembly will not interfere with each other when the ITB unit is removed.

⚠Be sure to put back the fixing release arm plate used to hold the fixing drive gear assembly in place as follows when mounting the ITB unit:

1) If you have attached the delivery tray, remove it for the time being.
If the fixing release arm plate is mounted in the presence of the delivery tray, the fixing release arm (rear) will get stuck on the boss of the delivery tray, preventing transmission of drive to the fixing roller.

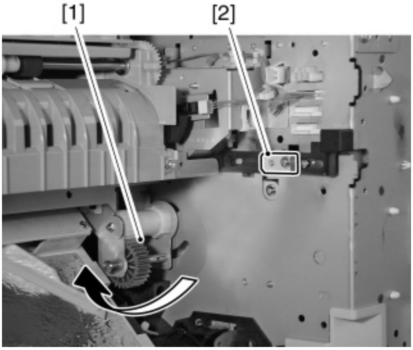
2) Remove the fixing release arm plate [1] so that the fixing drive gear assembly will be freed.



F-7-191

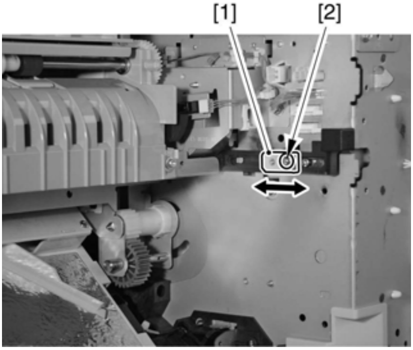
3) With the fixing drive gear assembly [1] fully moved by hand in the direction of

the arrow, fit the fixing releasing arm plate [2] in to the hole to secure it in place.



F-7-192

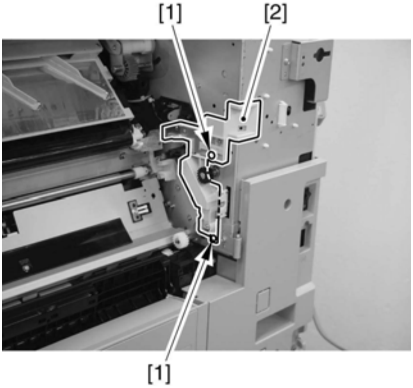
4) Fix the fixing releasing arm plate [1] in place using a screw [2]. Thereafter, try moving the fixing release arm back and forth to be sure that the fixing drive gear assembly moves in response.



F-7-193

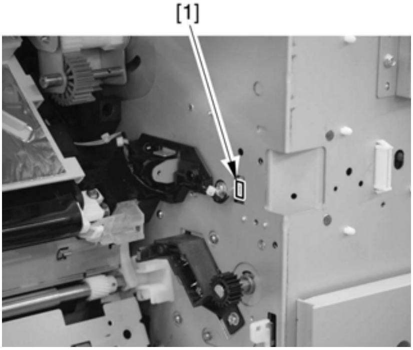
---

3) Remove 2 screws [1], and detach the contact guide [2].



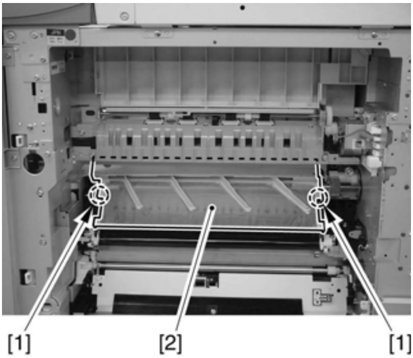
F-7-194

4) Disconnect the connector [1], and free the cable from the cable guide.



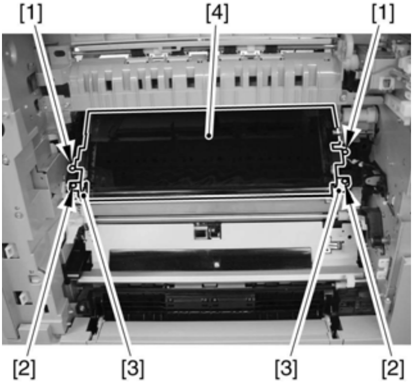
F-7-195

5) Lift the 2 points of the ITB fan duct [1] to free the claw; then, detach the ITB fan duct [2].



F-7-196

6) Remove the 2 screws [1] (TP; M3x6) and the 2 screws [2] (binding; M4x14); then, lift the 2 grips [3] to detach from the bushing assembly, and detach the ITB unit



F-7-197

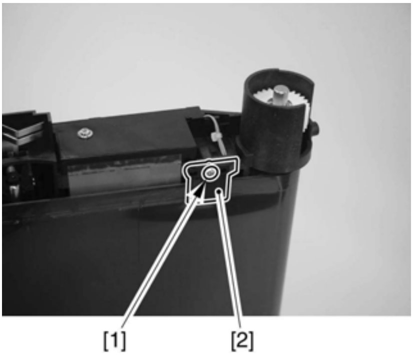
⚠When removing the ITB unit, be sure to take full care not to touch or damage the ITB. When you have removed the ITB unit, try not to place it on the floor or a desk without paper under it.

⚠If you must leave the ITB unit alone for a long time after removing it, be sure to cover the surface of the photosensitive drum to protect it against light.

7.10.9.11 Removing the Intermediate Transfer Belt (ITB)

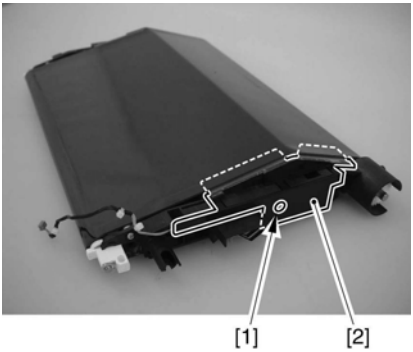
⚠Do not place the ITB unit directly on the floor or a desk. Be sure to place paper underneath.

1) Remove the screw [1], and detach the ITB retainer [2].



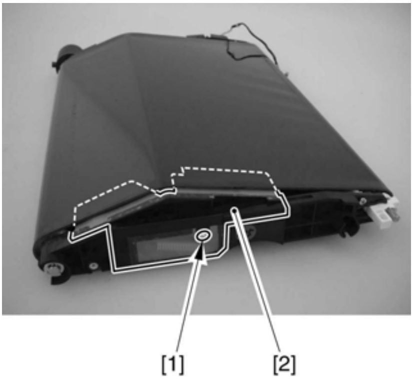
F-7-198

2) Remove the screw [1], and detach the sheet base (rear) [2].



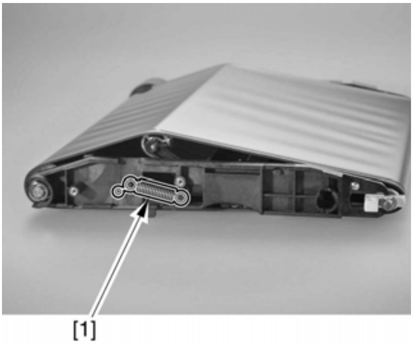
F-7-199

3) Remove the screw [1], and detach the sheet base (front) [2].

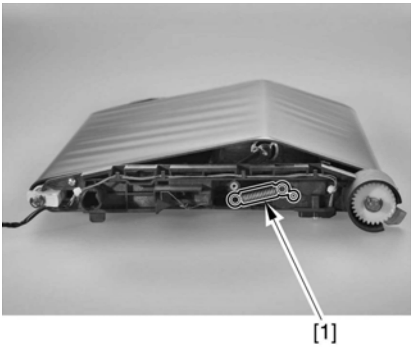


F-7-200

4) Remove the 2 tension springs [1].

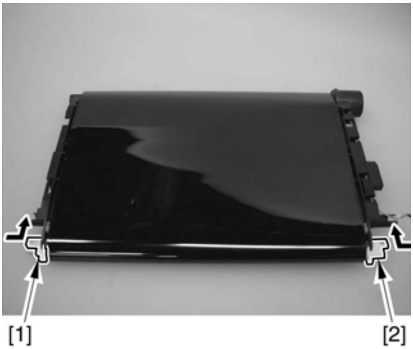


F-7-201



F-7-202

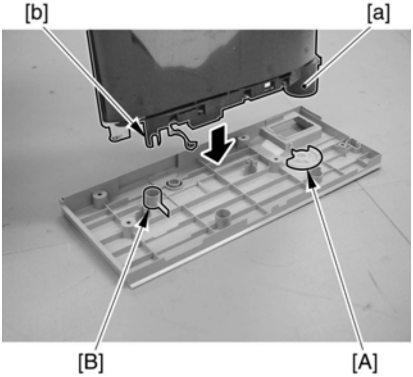
5) While pushing the bushings [1] and [2] of the secondary transfer inside roller toward the inside, slide them in the direction of the arrows until they stop.



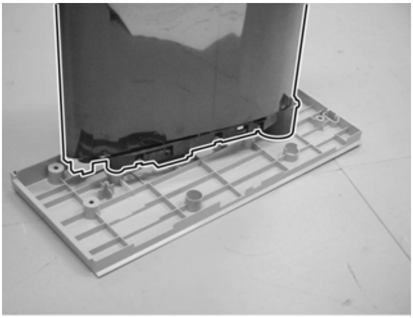
F-7-203

Memo:
This step loosens the ITB and thus facilitates the removal of the ITB.

6) Stand the ITB unit using the right cover (upper rear) detached when the ITB unit was removed. To stand the ITB unit, insert [a] and [b] of the ITB unit frame into the ribs [A] and [B] on the right cover (upper rear).

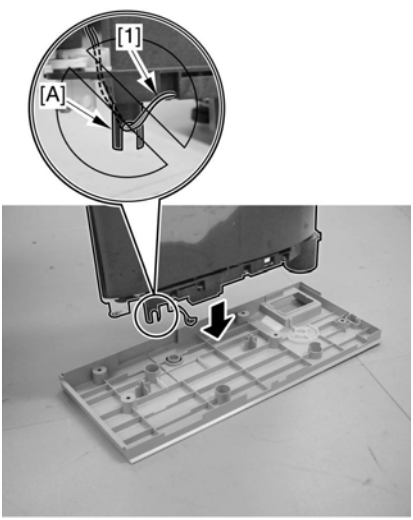


F-7-204



F-7-205

⚠ Care should be taken at this time not to catch the ITB home position sensor cable [1] in the ITB unit frame [A].



F-7-206

7) Pull up the ITB [1] to remove.

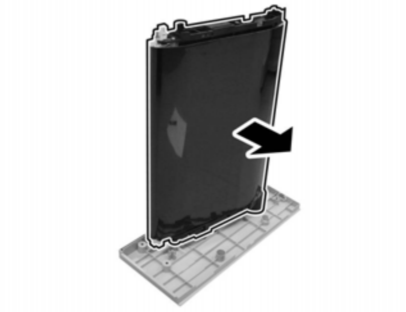
F-7-207

⚠ Note on Falling Down of the ITB Unit

Although the ITB unit stands by means of the right cover (upper rear), it is still very unstable and may fall down.

Care should be taken on the following points when servicing:

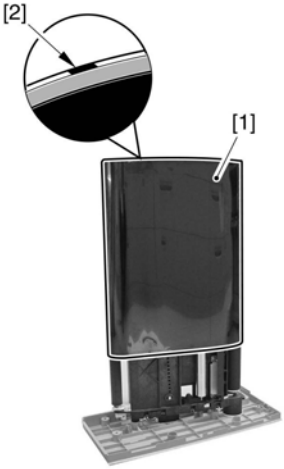
- Work performed by standing the ITB unit is limited to attachment/removal of the ITB. In other words, do not stand the ITB unit for other work (such as cleaning and replacement of parts other than the ITB).
- Be aware that the ITB unit easily falls down when power is applied to the arrow direction in the figure below.



F-7-208

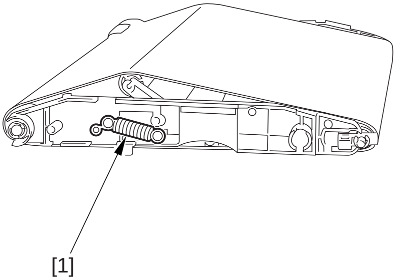
7.10.9.12 Points to Note When Mounting the ITB

- When placing the ITB unit upright, be sure that the drive gear side is at the bottom.
- When mounting the ITB [1], be sure to orient it so that the end with a marking (red) [2] is at the top in the ITB frame.

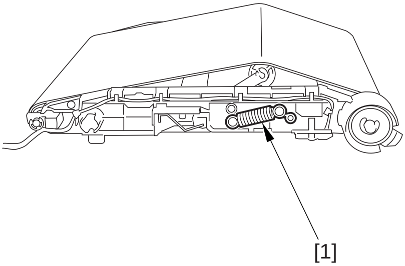


F-7-209

- Orient 2 tension springs [1] as shown in the figure below, and attach them. When they are oriented to the reverse direction, they fail to keep the proper ITB tension, leading to poor transfer or ITB breakage.

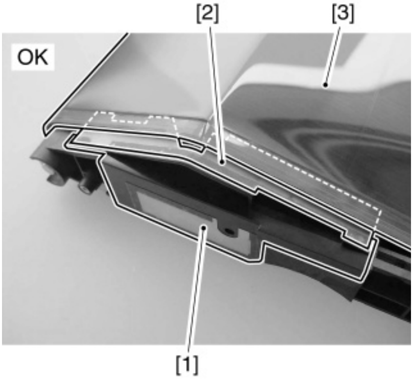


F-7-210

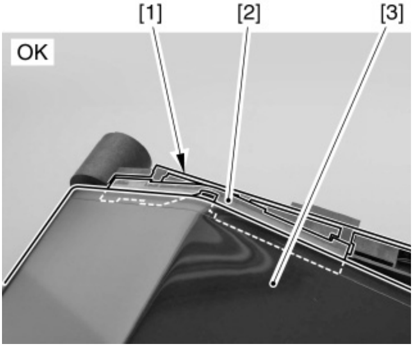


F-7-211

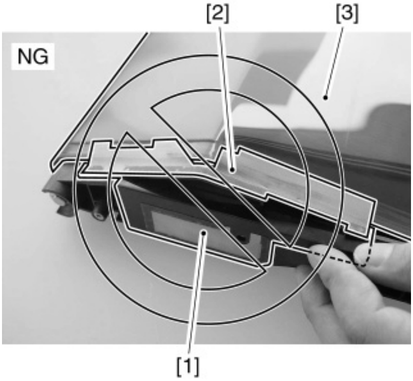
- When mounting the sheet base (front) [1], take full care so that the plastic film [2] will not ride over the ITB [3].



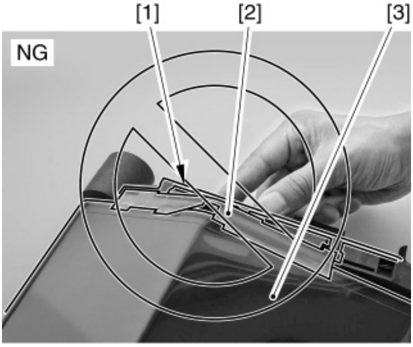
F-7-212



F-7-214



F-7-213

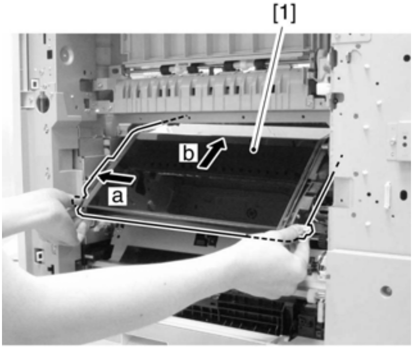


F-7-215

- When mounting the sheet base (rear) [1], be sure that the plastic film [2] will not ride over the ITB [3].

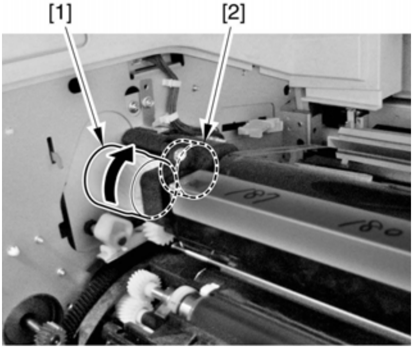
7.10.9.13 Points to Note When Mounting the ITB Unit

- When fitting the ITB unit [1] in the machine, move the unit in the direction of the arrow a (toward the machine front) and then along the rails in the direction of the arrow b.



F-7-216

- When you have fitted the ITB unit in the machine, be sure to give the gear [1] a full turn before tightening the screw to fix it in place. Merely fitting the ITB unit in the machine does not always mean that the gear [1] and the other gear [2] have fully been engaged; the turn will mesh them correctly.

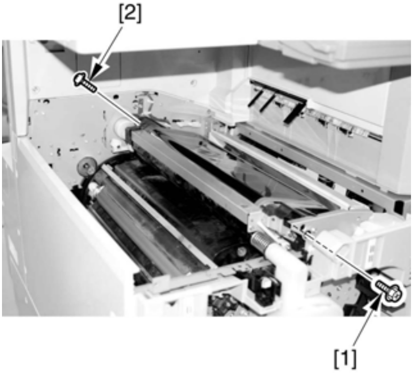


F-7-217

- The gear [1] above is coated with grease; the gear [2] is also coated with grease. If the grease adheres to your hand when rotating the gears, immediately wash your hands. You must not touch the ITB with your hand having the grease on.

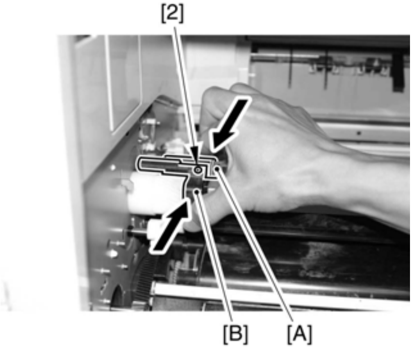
- Follow the steps below to tighten the screws on the ITB unit.

1) Tighten 1 screw [1], and then temporarily tighten 1 screw [2].



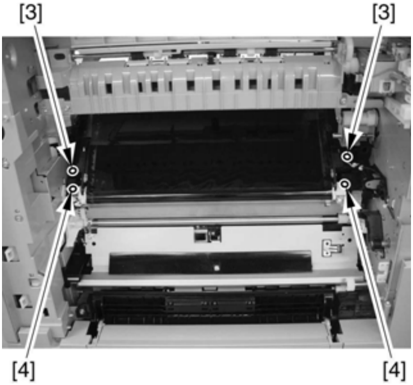
F-7-218

2) Use your fingers to pinch the ITB unit frame [A] and the ITB unit support part [B] in the direction of an arrow, so that there will be no looseness between them. Keep them as they are, and tighten the screw [2].



F-7-219

3) Attach 2 screws [3] (TP screw; M3x6) and 2 screws [4] (binding screw; M4x14). There is no specific order for attaching the two types of screw (i.e., screw [3] and [4]). Therefore, it is possible to attach either of them first.

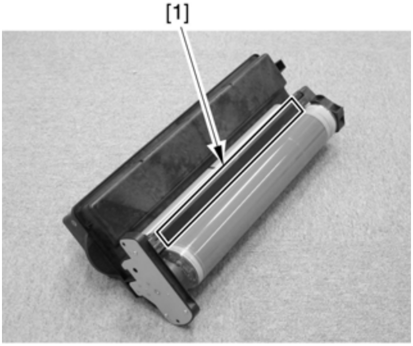


F-7-220

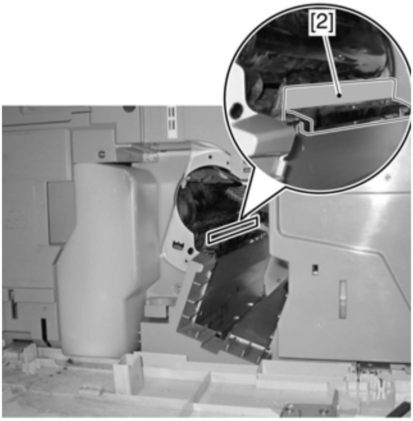
⚠ When failing to follow the proper procedure (Step 2) above) before tightening the screw [2], the rear side of the ITB cleaning blade may not be in complete contact with the ITB, leading to faulty cleaning. Moreover, when failing to attach the screw [1] and the screw [2] in the correct order (i.e., screw [1] => screw [2]), some lines (96.7mm pitch) may appear on the images.

7.10.9.14 Points to Note When Mounting the Drum Unit

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.
  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-221



F-7-222

Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.9.15 After Replacing the Intermediate Transfer Belt

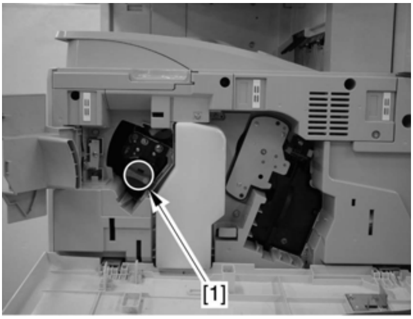
Execute the following service mode item:

- COPIER>FUNCTION>MISC-P>1ATVC-EX

7.10.10 ITB Home Position Sensor PCB

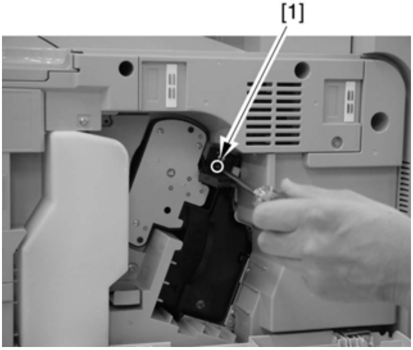
7.10.10.1 Removing the Drum Unit

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



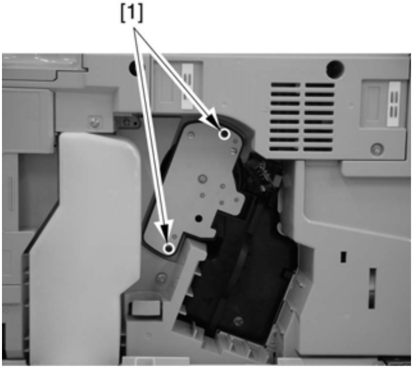
F-7-223

2) Remove the screw [1] (black; M3x20).



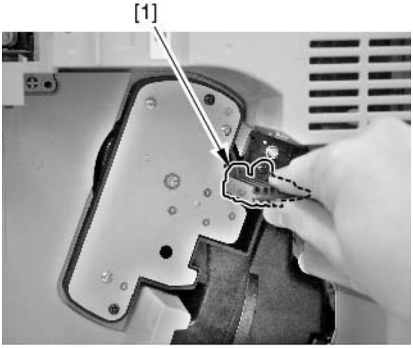
F-7-224

3) Remove the 2 fixing screws [1] (M4x20).

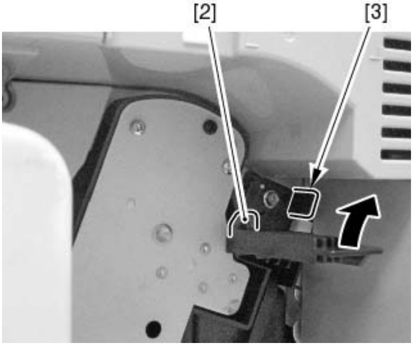


F-7-225

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

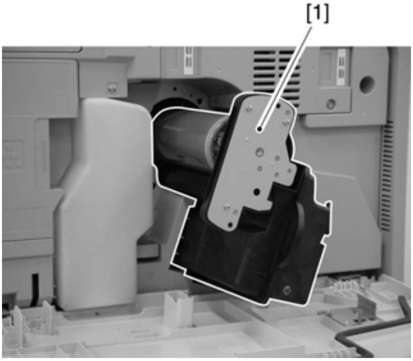


F-7-226



F-7-227

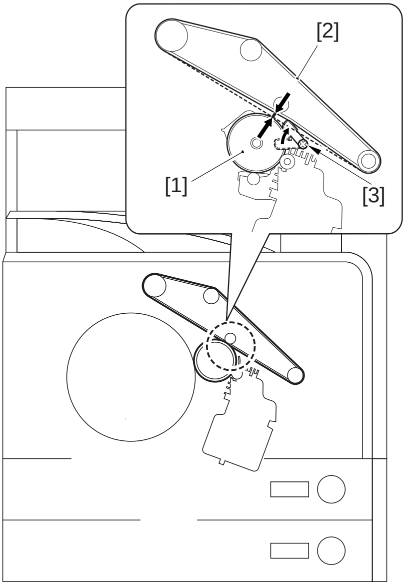
5) Slide out the drum unit [1] to the front to detach.



F-7-228

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



F-7-229

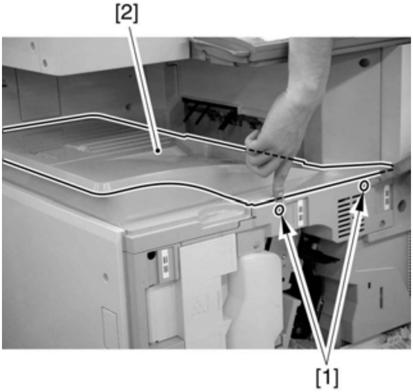
At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.10.2 Removing the Delivery Tray

1) Open the front cover.

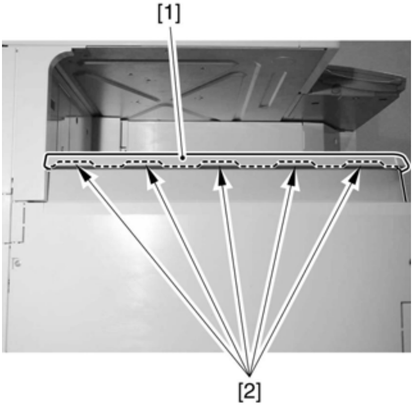
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-230

⚠**Points to Note When Mounting the Delivery Tray**

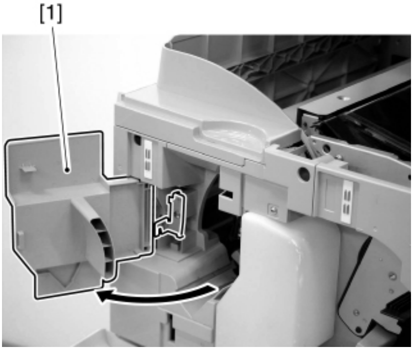
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-231

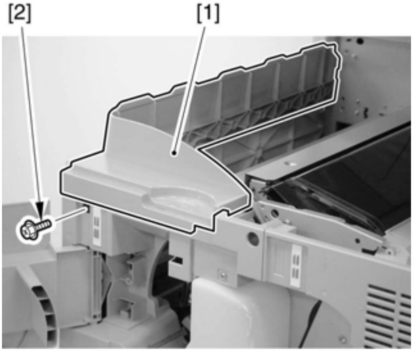
7.10.10.3 Removing the Delivery Tray Lower Cover

1) Open the toner cartridge access cover [1].



F-7-232

2) Remove the screw [2], and detach the delivery tray lower cover [1].

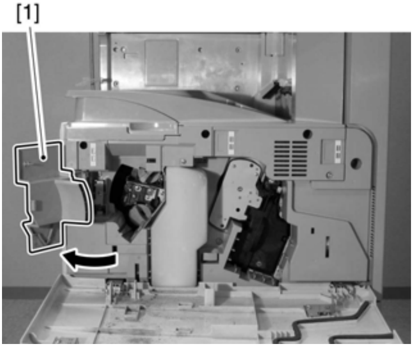


F-7-233

7.10.10.4 Removing the waste toner unit retainer

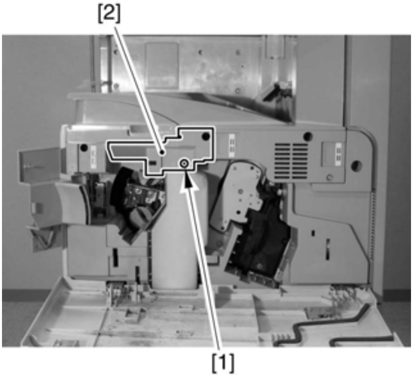
1) Open the front cover.

2) Open the toner container access cover [1].



F-7-234

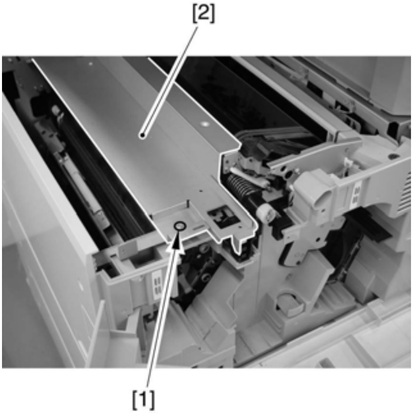
3) Remove the TP screw [1], and detach the waste toner unit retainer [2].



F-7-235

7.10.10.5 Removing the protective plate

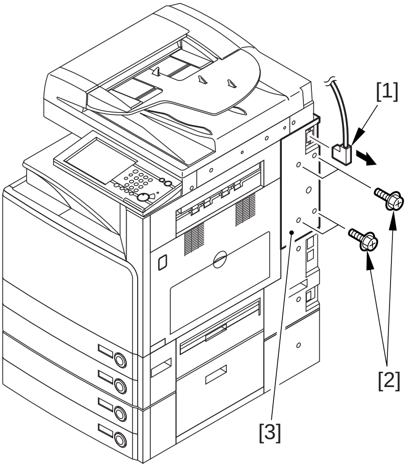
1) Remove the screw [1], and detach the protective plate [2].



F-7-236

7.10.10.6 Removing the Right Cover (upper rear)

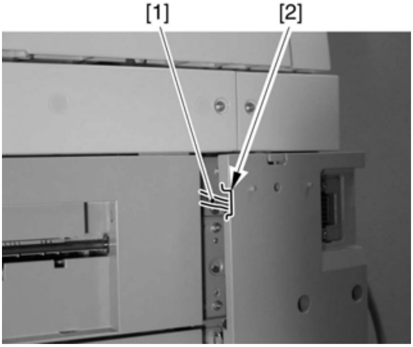
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-237

⚠**Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)**

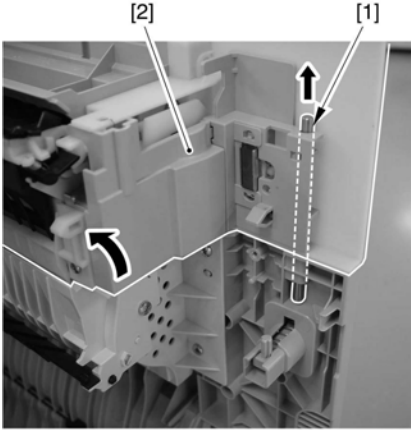
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-7-238

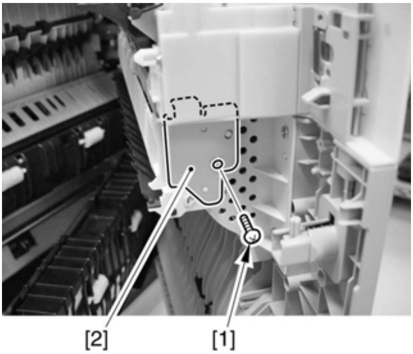
7.10.10.7 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-239

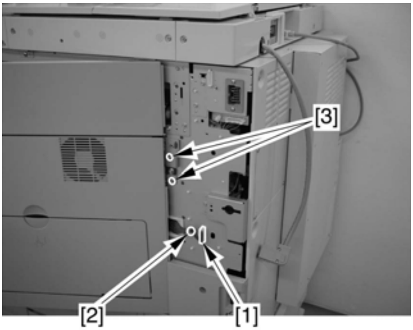
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-240

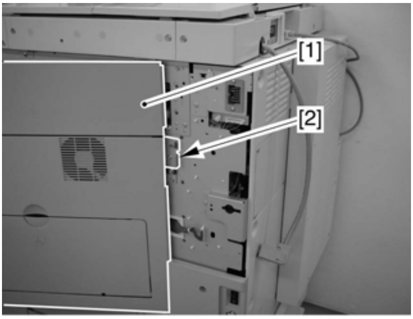
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-241

6) Detach the right door [1] together with the hinge [2].

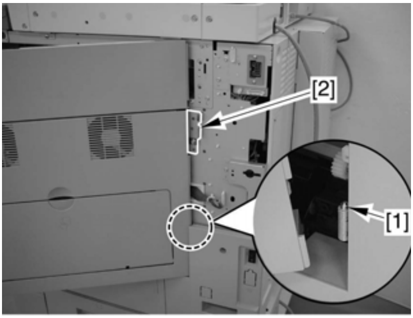


F-7-242

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

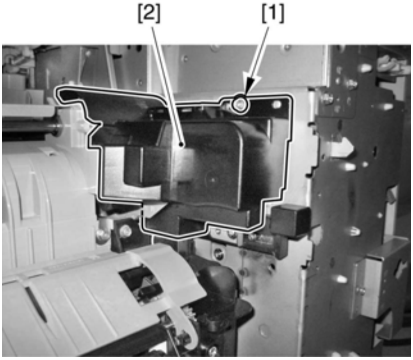


F-7-243

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

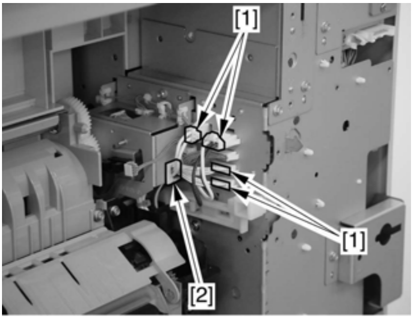
7.10.10.8 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



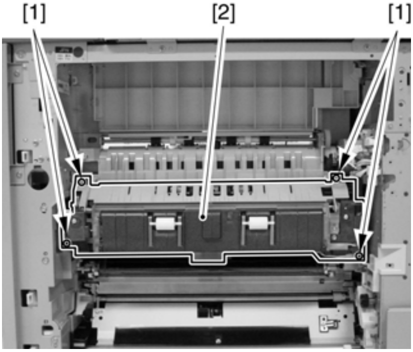
F-7-244

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-245

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-7-246

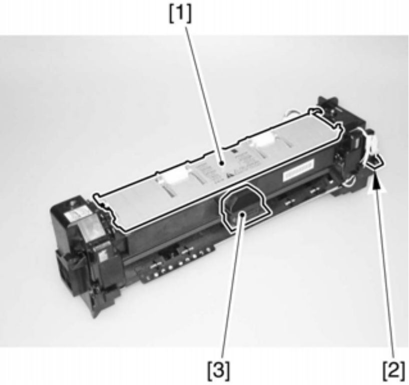
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-7-247

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

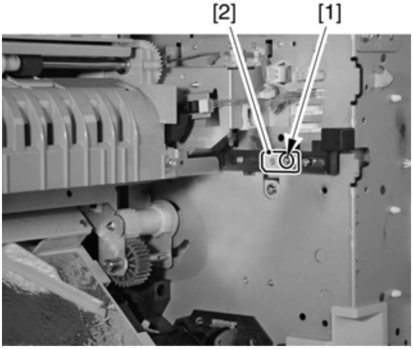
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

7.10.10.9 Removing the Fixing Release Arm Plate

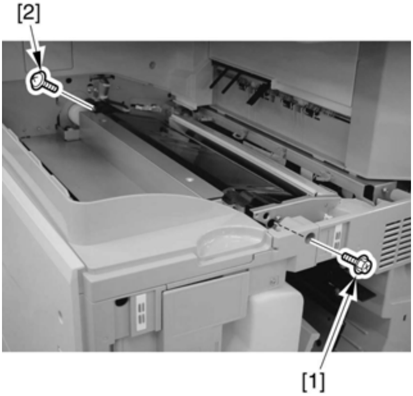
1) Remove the screw [1], and detach the plate [2].



F-7-248

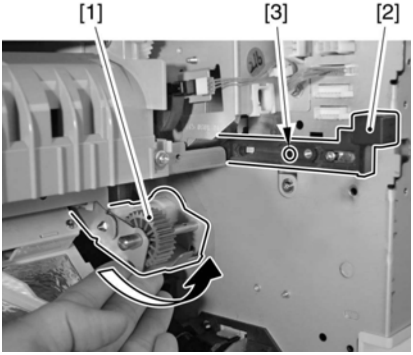
7.10.10.10 Removing the Intermediate Toner Unit (ITB unit)

1) Remove the screw [1], and remove the screw [2].

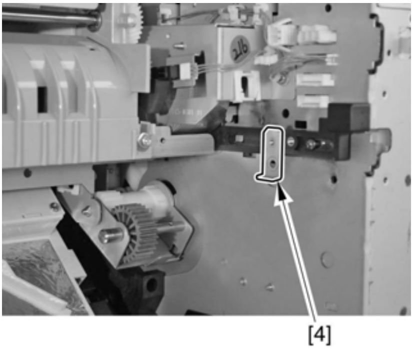


F-7-249

2) With the fixing drive gear assembly [1] fully lifted in the direction of the arrow, fit the previously removed fixing release arm plate [4] into the hole of the fixing release arm [2] to hold the fixing drive gear assembly [1] in place.



F-7-250



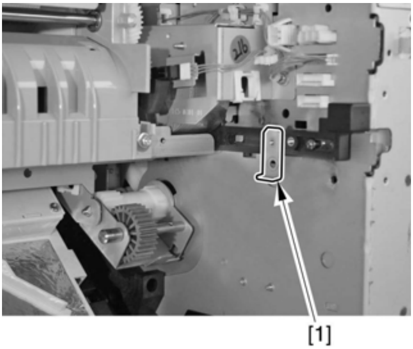
F-7-251

Memo:
Step 2) is performed so that the ITB unit and the fixing drive gear assembly will not interfere with each other when the ITB unit is removed.

⚠Be sure to put back the fixing release arm plate used to hold the fixing drive gear assembly in place as follows when mounting the ITB unit:

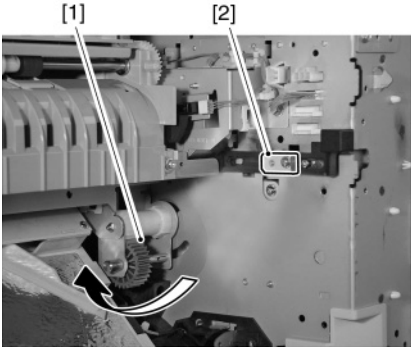
1) If you have attached the delivery tray, remove it for the time being.
If the fixing release arm plate is mounted in the presence of the delivery tray, the fixing release arm (rear) will get stuck on the boss of the delivery tray, preventing transmission of drive to the fixing roller.

2) Remove the fixing release arm plate [1] so that the fixing drive gear assembly will be freed.



F-7-252

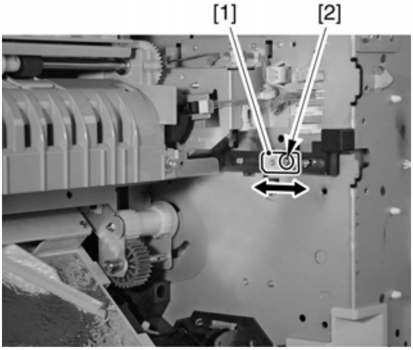
3) With the fixing drive gear assembly [1] fully moved by hand in the direction of the arrow, fit the fixing releasing arm plate [2] in to the hole to secure it in place.



F-7-253

4) Fix the fixing releasing arm plate [1] in place using a screw [2]. Thereafter, try moving the fixing release arm back and forth to be sure that the fixing drive gear

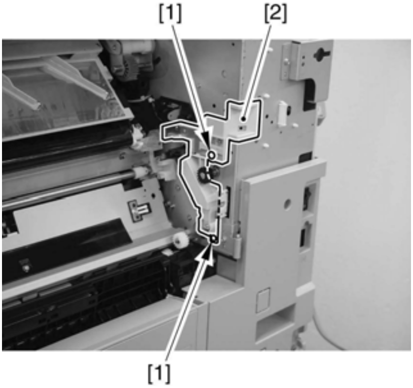
assembly moves in response.



F-7-254

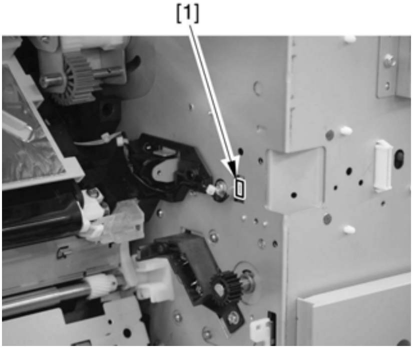
---

3) Remove 2 screws [1], and detach the contact guide [2].



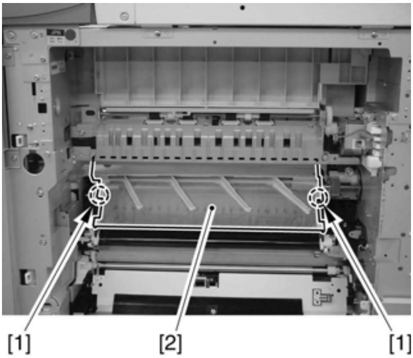
F-7-255

4) Disconnect the connector [1], and free the cable from the cable guide.



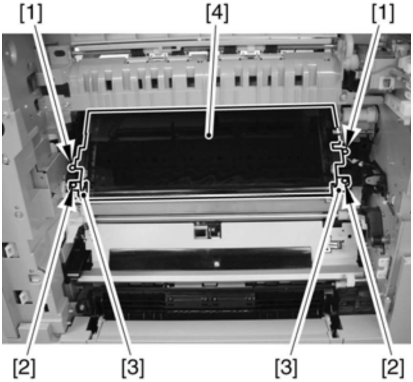
F-7-256

5) Lift the 2 points of the ITB fan duct [1] to free the claw; then, detach the ITB fan duct [2].



F-7-257

6) Remove the 2 screws [1] (TP; M3x6) and the 2 screws [2] (binding; M4x14); then, lift the 2 grips [3] to detach from the bushing assembly, and detach the ITB unit



F-7-258

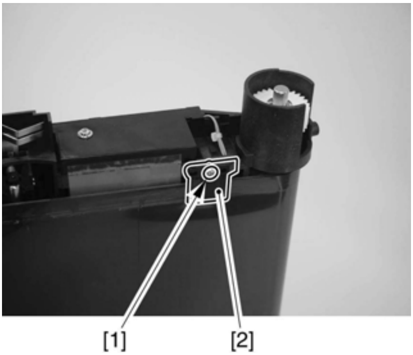
⚠When removing the ITB unit, be sure to take full care not to touch or damage the ITB. When you have removed the ITB unit, try not to place it on the floor or a desk without paper under it.

⚠If you must leave the ITB unit alone for a long time after removing it, be sure to cover the surface of the photosensitive drum to protect it against light.

7.10.10.11 Removing the Intermediate Transfer Belt (ITB)

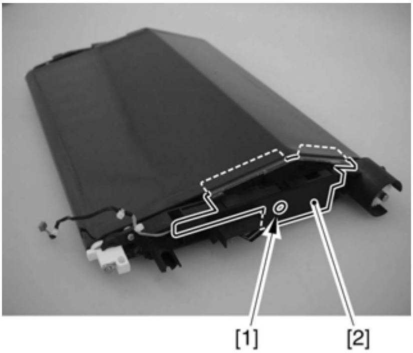
⚠Do not place the ITB unit directly on the floor or a desk. Be sure to place paper underneath.

1) Remove the screw [1], and detach the ITB retainer [2].



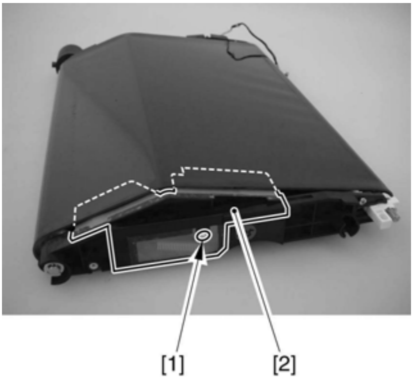
F-7-259

2) Remove the screw [1], and detach the sheet base (rear) [2].



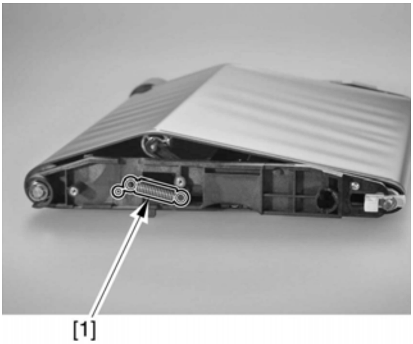
F-7-260

3) Remove the screw [1], and detach the sheet base (front) [2].

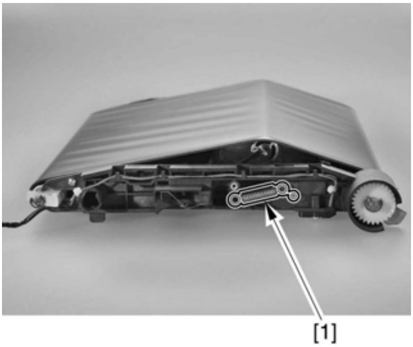


F-7-261

4) Remove the 2 tension springs [1].

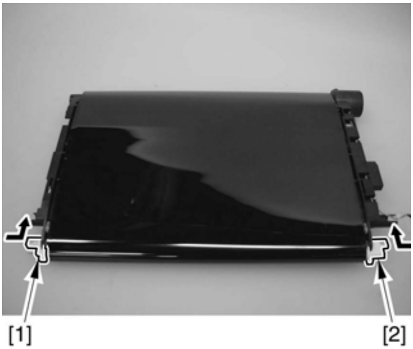


F-7-262



F-7-263

5) While pushing the bushings [1] and [2] of the secondary transfer inside roller toward the inside, slide them in the direction of the arrows until they stop.



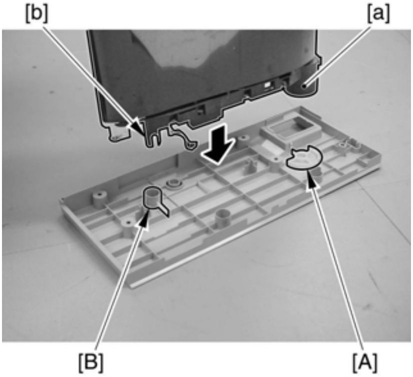
F-7-264

Memo:
This step loosens the ITB and thus facilitates the removal of the ITB.

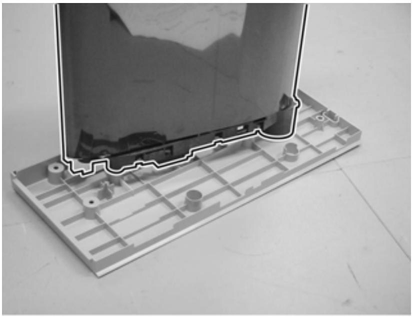
---

6) Stand the ITB unit using the right cover

(upper rear) detached when the ITB unit was removed. To stand the ITB unit, insert [a] and [b] of the ITB unit frame into the ribs [A] and [B] on the right cover (upper rear).

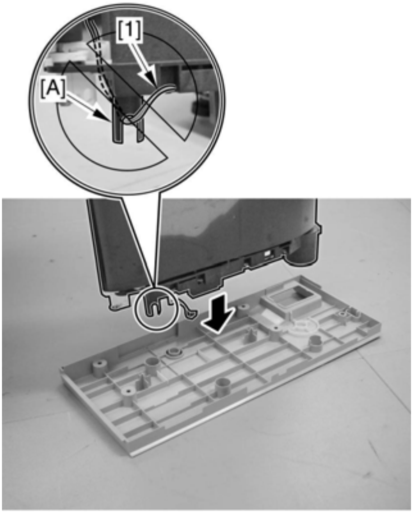


F-7-265



F-7-266

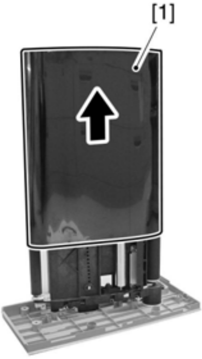
⚠ Care should be taken at this time not to catch the ITB home position sensor cable [1] in the ITB unit frame [A].



F-7-267

---

7) Pull up the ITB [1] to remove.



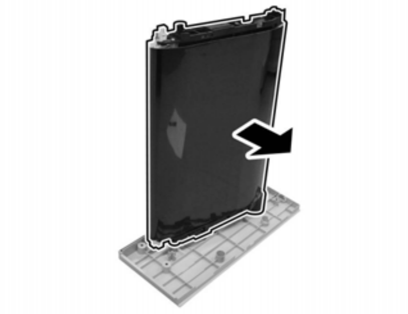
F-7-268

⚠ Note on Falling Down of the ITB Unit

Although the ITB unit stands by means of the right cover (upper rear), it is still very unstable and may fall down.

Care should be taken on the following points when servicing:

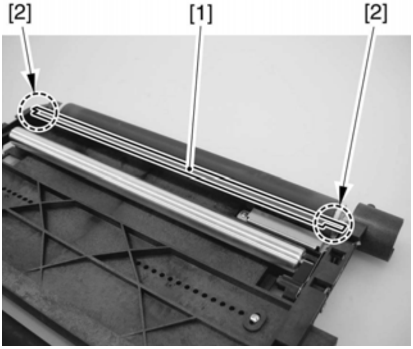
- Work performed by standing the ITB unit is limited to attachment/removal of the ITB. In other words, do not stand the ITB unit for other work (such as cleaning and replacement of parts other than the ITB).
- Be aware that the ITB unit easily falls down when power is applied to the arrow direction in the figure below.



F-7-269

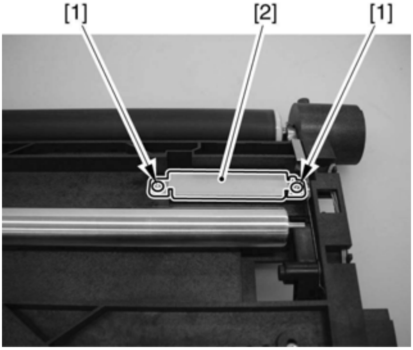
7.10.10.12 Removing the ITB Home Position Sensor PCB

1) Hold the inside blade [1] by both its edges, and detach it in upward direction.



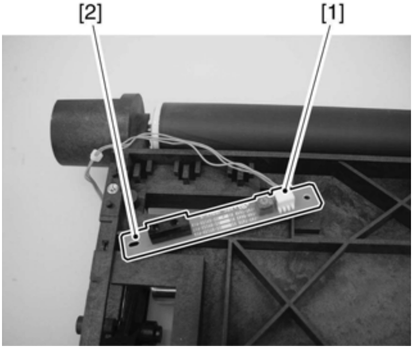
F-7-270

2) Remove the 2 screws [1], and detach the plate [2].



F-7-271

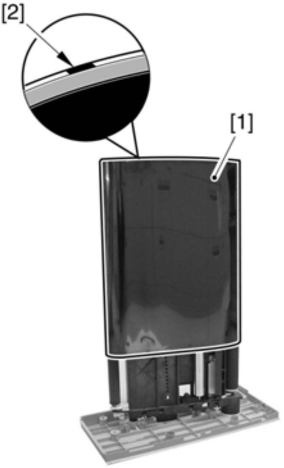
3) Turn over the ITB unit, and disconnect the connector [1]; then, detach the ITB home position sensor PCB [2].



F-7-272

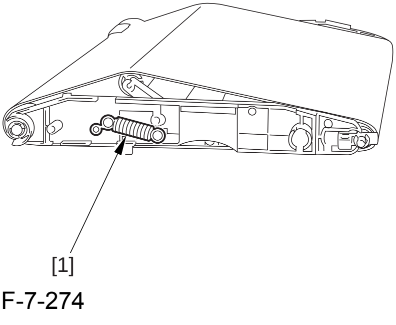
7.10.10.13 Points to Note When Mounting the ITB

- When placing the ITB unit upright, be sure that the drive gear side is at the bottom.
- When mounting the ITB [1], be sure to orient it so that the end with a marking (red) [2] is at the top in the ITB frame.

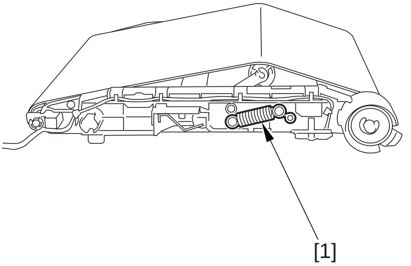


F-7-273

- Orient 2 tension springs [1] as shown in the figure below, and attach them. When they are oriented to the reverse direction, they fail to keep the proper ITB tension, leading to poor transfer or ITB breakage.

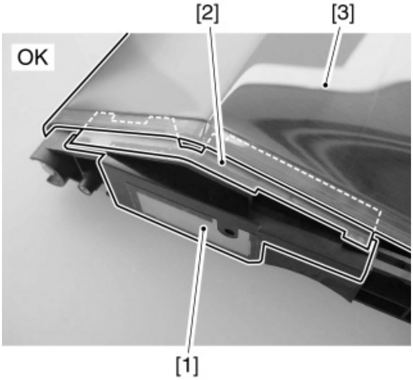


F-7-274

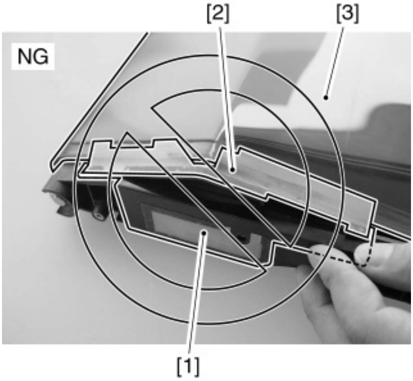


F-7-275

- When mounting the sheet base (front) [1], take full care so that the plastic film [2] will not ride over the ITB [3].

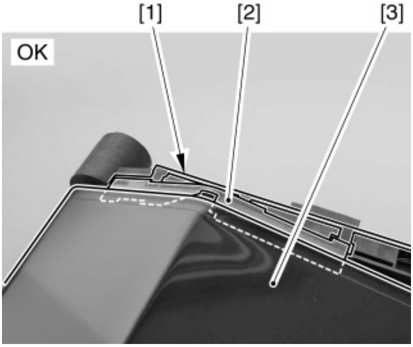


F-7-276

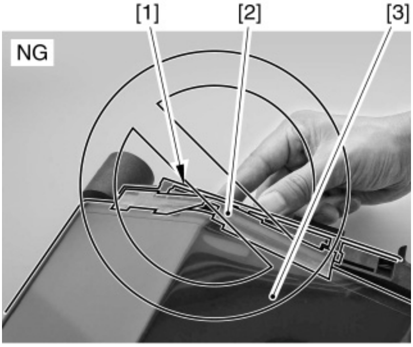


F-7-277

- When mounting the sheet base (rear) [1], be sure that the plastic film [2] will not ride over the ITB [3].



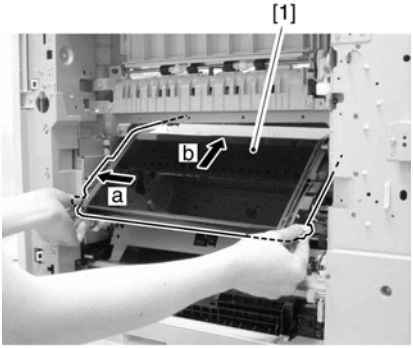
F-7-278



F-7-279

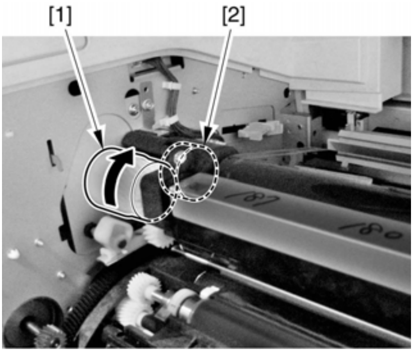
7.10.10.14 Points to Note When Mounting the ITB Unit

- When fitting the ITB unit [1] in the machine, move the unit in the direction of the arrow a (toward the machine front) and then along the rails in the direction of the arrow b.



F-7-280

- When you have fitted the ITB unit in the machine, be sure to give the gear [1] a full turn before tightening the screw to fix it in place. Merely fitting the ITB unit in the machine does not always mean that the gear [1] and the other gear [2] have fully been engaged; the turn will mesh them correctly.

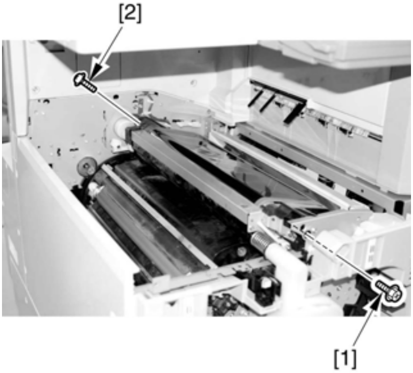


F-7-281

- The gear [1] above is coated with grease; the gear [2] is also coated with grease. If the grease adheres to your hand when rotating the gears, immediately wash your hands. You must not touch the ITB with your hand having the grease on.

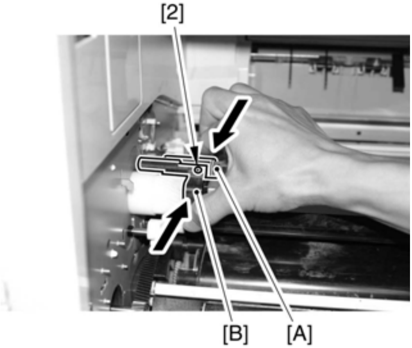
- Follow the steps below to tighten the screws on the ITB unit.

1) Tighten 1 screw [1], and then temporarily tighten 1 screw [2].



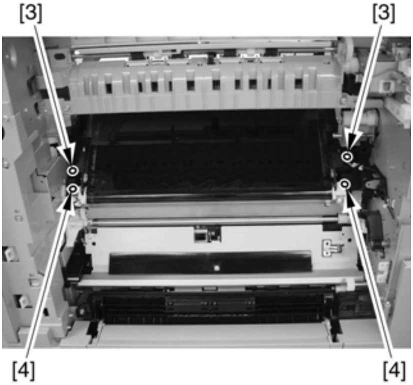
F-7-282

2) Use your fingers to pinch the ITB unit frame [A] and the ITB unit support part [B] in the direction of an arrow, so that there will be no looseness between them. Keep them as they are, and tighten the screw [2].



F-7-283

3) Attach 2 screws [3] (TP screw; M3x6) and 2 screws [4] (binding screw; M4x14). There is no specific order for attaching the two types of screw (i.e., screw [3] and [4]). Therefore, it is possible to attach either of them first.



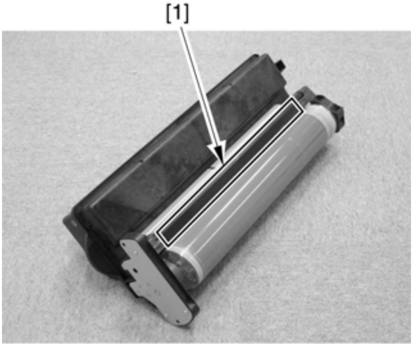
F-7-284

⚠ When failing to follow the proper procedure (Step 2) above) before tightening the screw [2], the rear side of the ITB cleaning blade may not be in complete contact with the ITB, leading to faulty cleaning. Moreover, when failing to attach the screw [1] and the screw [2] in the correct order (i.e., screw [1] => screw [2]), some lines (96.7mm pitch) may appear on the images.

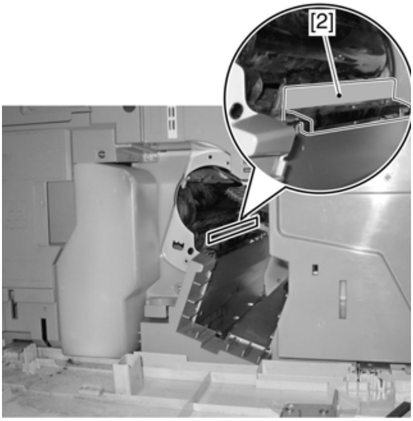
7.10.10.15 Points to Note When Mounting the Drum Unit

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-285



F-7-286

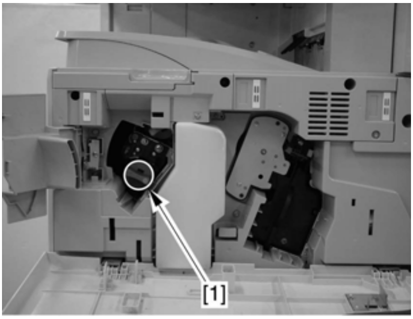
Memo:

The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.11 Primary Transfer Roller

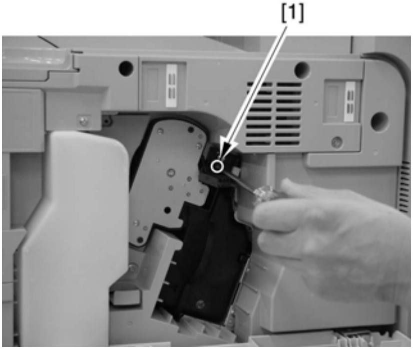
7.10.11.1 Removing the Drum Unit

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



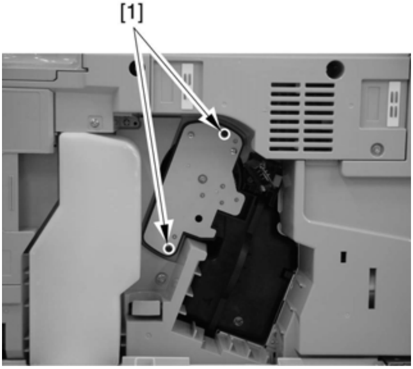
F-7-287

2) Remove the screw [1] (black; M3x20).



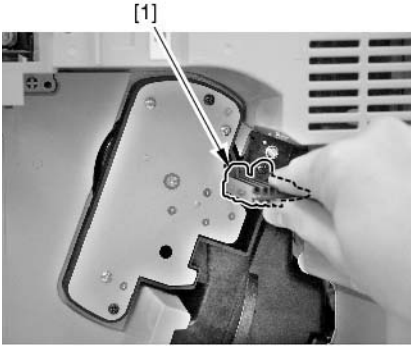
F-7-288

3) Remove the 2 fixing screws [1] (M4x20).

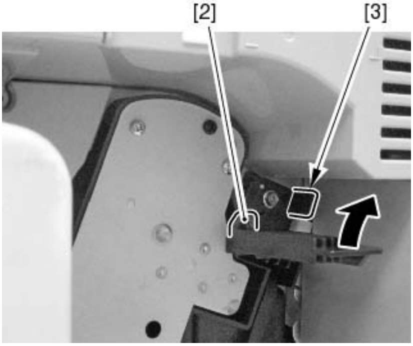


F-7-289

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

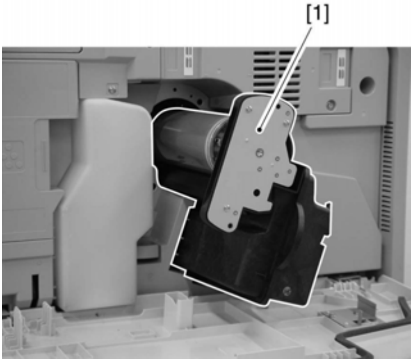


F-7-290



F-7-291

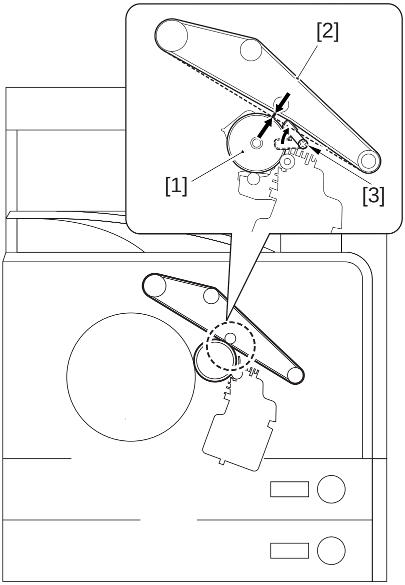
5) Slide out the drum unit [1] to the front to detach.



F-7-292

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



F-7-293

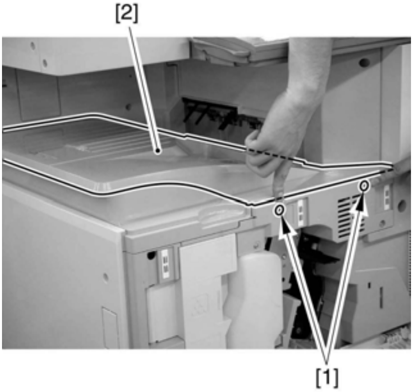
At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.11.2 Removing the Delivery Tray

1) Open the front cover.

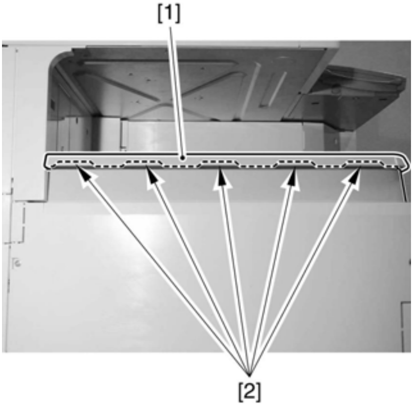
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-294

⚠Points to Note When Mounting the Delivery Tray

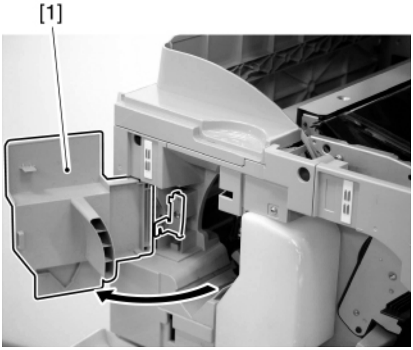
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-295

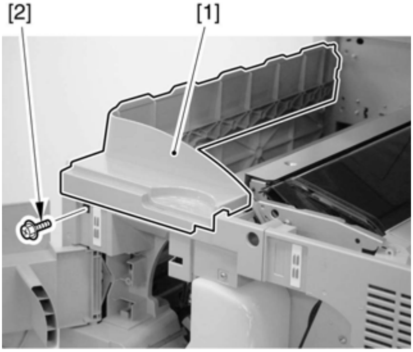
7.10.11.3 Removing the Delivery Tray Lower Cover

1) Open the toner cartridge access cover [1].



F-7-296

2) Remove the screw [2], and detach the delivery tray lower cover [1].

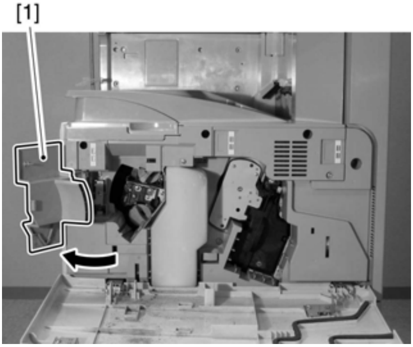


F-7-297

7.10.11.4 Removing the waste toner unit retainer

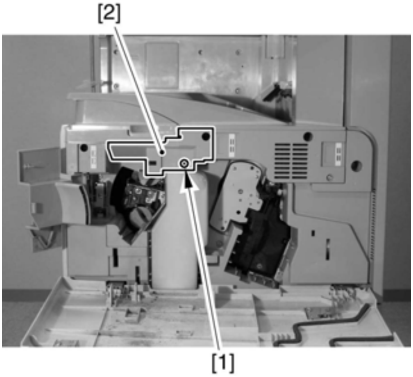
1) Open the front cover.

2) Open the toner container access cover [1].



F-7-298

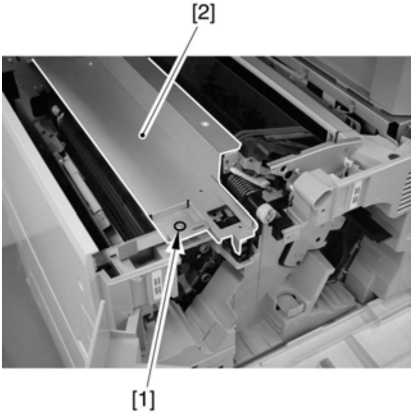
3) Remove the TP screw [1], and detach the waste toner unit retainer [2].



F-7-299

7.10.11.5 Removing the protective plate

1) Remove the screw [1], and detach the protective plate [2].

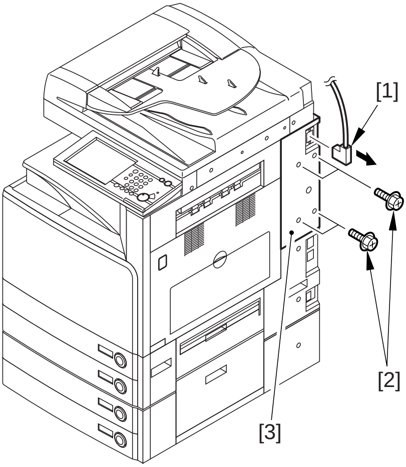


F-7-300

7.10.11.6 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

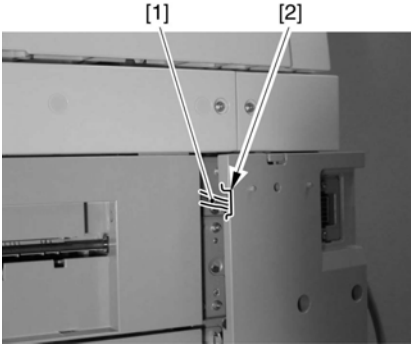
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-301

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

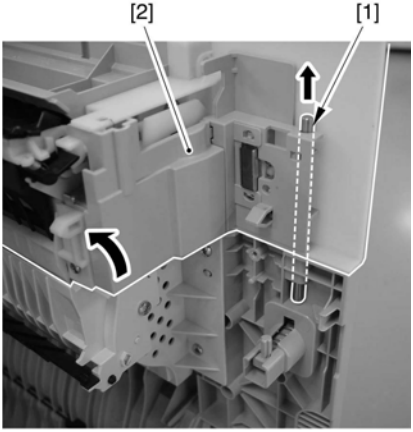


F-7-302

7.10.11.7 Removing the Right Door

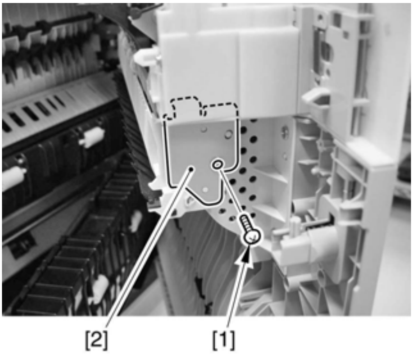
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-303

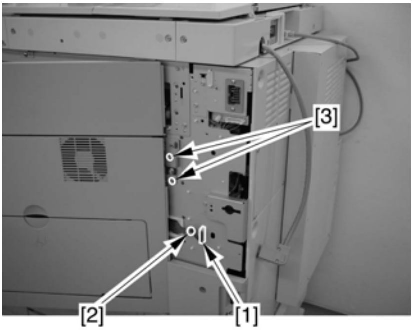
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-304

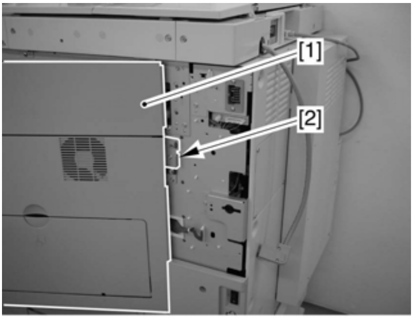
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-305

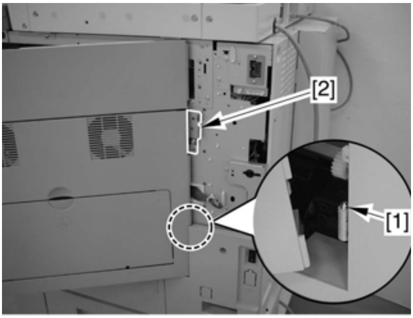
6) Detach the right door [1] together with the hinge [2].



F-7-306

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

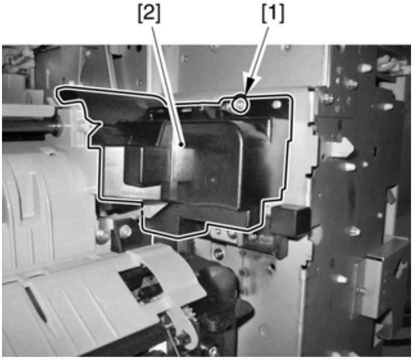


F-7-307

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

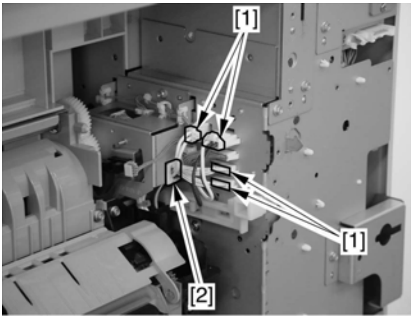
7.10.11.8 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



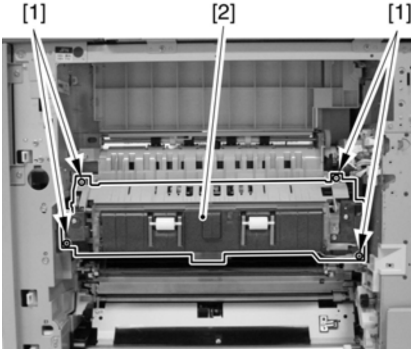
F-7-308

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-309

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-7-310

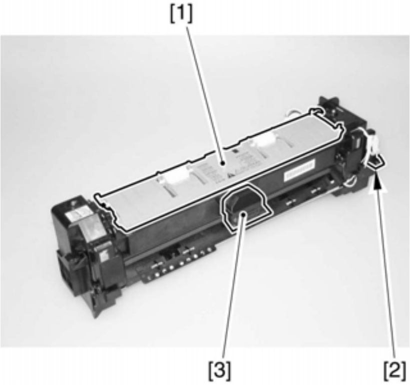
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

Placing the Fixing Assembly

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-7-311

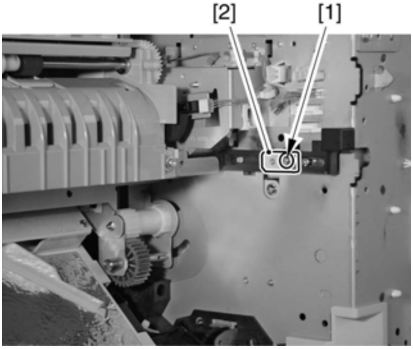
1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

   COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

   COPIER> COUNTER> MISC> FX-UP-RL

7.10.11.9 Removing the Fixing Release Arm Plate

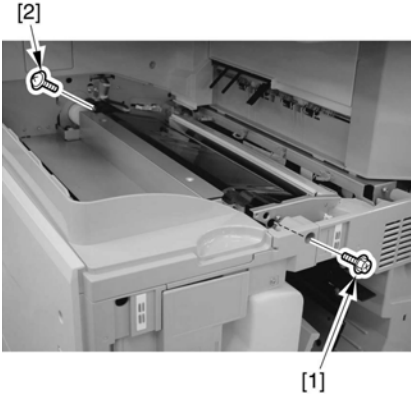
1) Remove the screw [1], and detach the plate [2].



F-7-312

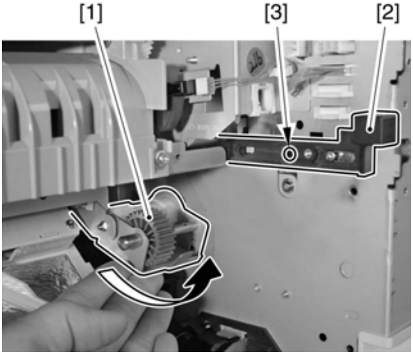
7.10.11.10 Removing the Intermediate Transfer Unit (ITB unit)

1) Remove the screw [1], and remove the screw [2].

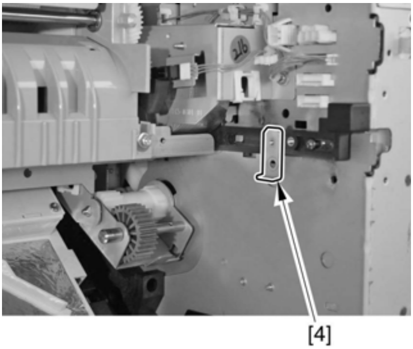


F-7-313

2) With the fixing drive gear assembly [1] fully lifted in the direction of the arrow, fit the previously removed fixing release arm plate [4] into the hole of the fixing release arm [2] to hold the fixing drive gear assembly [1] in place.



F-7-314

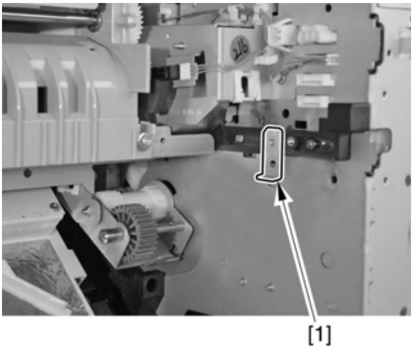


F-7-315

Memo:
Step 2) is performed so that the ITB unit and the fixing drive gear assembly will not interfere with each other when the ITB unit is removed.

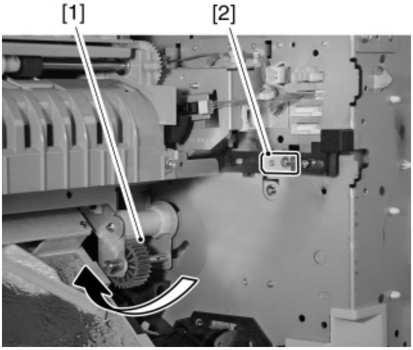
⚠Be sure to put back the fixing release arm plate used to hold the fixing drive gear assembly in place as follows when mounting the ITB unit:

1) If you have attached the delivery tray, remove it for the time being.
If the fixing release arm plate is mounted in the presence of the delivery tray, the fixing release arm (rear) will get stuck on the boss of the delivery tray, preventing transmission of drive to the fixing roller.
2) Remove the fixing release arm plate [1] so that the fixing drive gear assembly will be freed.



F-7-316

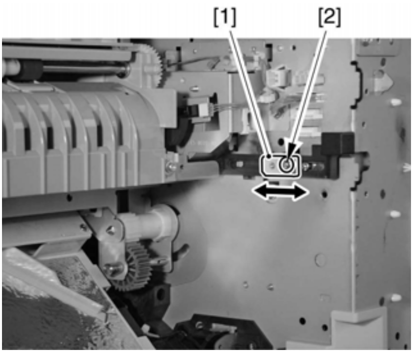
3) With the fixing drive gear assembly [1] fully moved by hand in the direction of the arrow, fit the fixing releasing arm plate [2] in to the hole to secure it in place.



F-7-317

4) Fix the fixing releasing arm plate [1] in place using a screw [2]. Thereafter, try moving the fixing release arm back and forth to be sure that the fixing drive gear

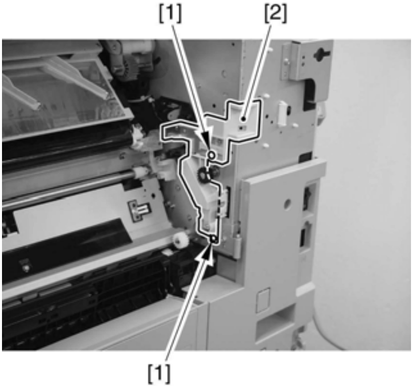
assembly moves in response.



F-7-318

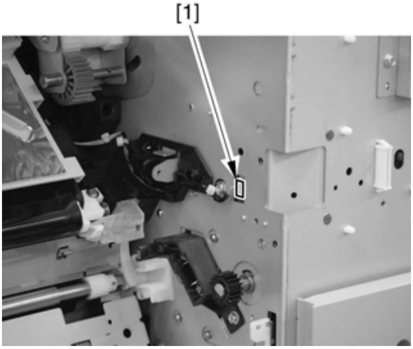
---

3) Remove 2 screws [1], and detach the contact guide [2].



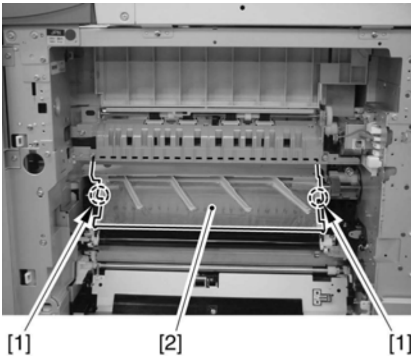
F-7-319

4) Disconnect the connector [1], and free the cable from the cable guide.



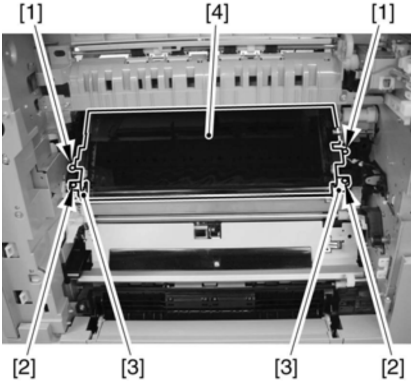
F-7-320

5) Lift the 2 points of the ITB fan duct [1] to free the claw; then, detach the ITB fan duct [2].



F-7-321

6) Remove the 2 screws [1] (TP; M3x6) and the 2 screws [2] (binding; M4x14); then, lift the 2 grips [3] to detach from the bushing assembly, and detach the ITB unit



F-7-322

⚠When removing the ITB unit, be sure to take full care not to touch or damage the ITB. When you have removed the ITB unit, try not to place it on the floor or a desk without paper under it.

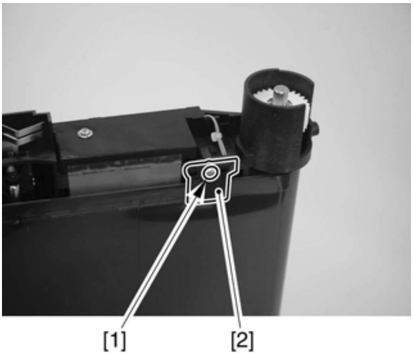
⚠If you must leave the ITB unit alone for a long time after removing it, be sure to cover the surface of the photosensitive drum to protect it against light.

7.10.11.11 Removing the Intermediate Transfer Belt (ITB)

⚠Do not place the ITB unit directly on the floor or a desk. Be sure to place paper underneath.

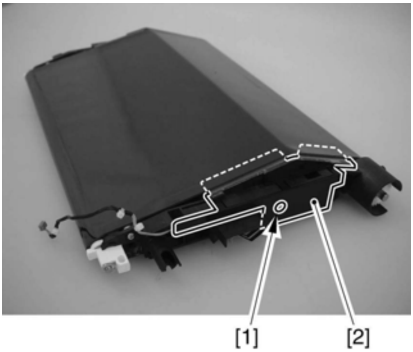
---

1) Remove the screw [1], and detach the ITB retainer [2].



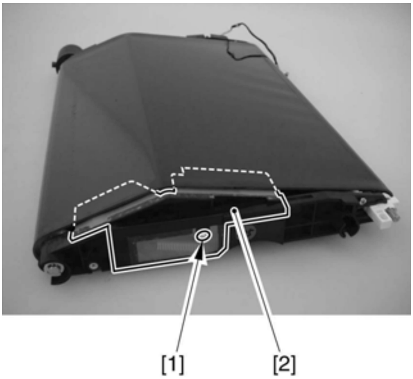
F-7-323

2) Remove the screw [1], and detach the sheet base (rear) [2].



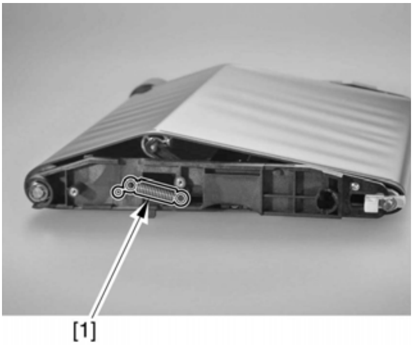
F-7-324

3) Remove the screw [1], and detach the sheet base (front) [2].

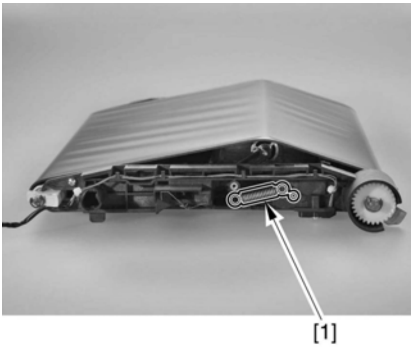


F-7-325

4) Remove the 2 tension springs [1].

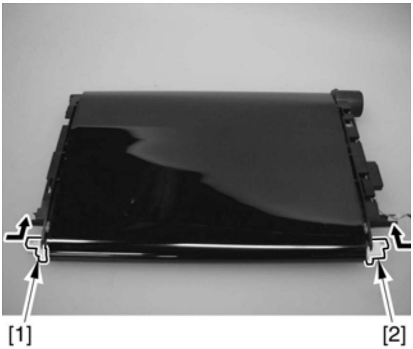


F-7-326



F-7-327

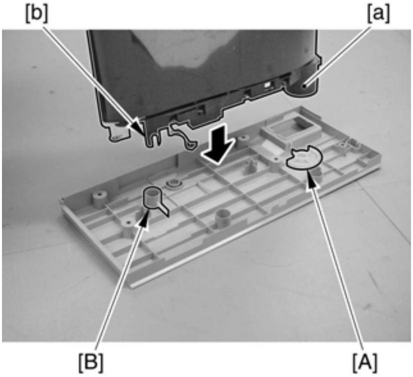
5) While pushing the bushings [1] and [2] of the secondary transfer inside roller toward the inside, slide them in the direction of the arrows until they stop.



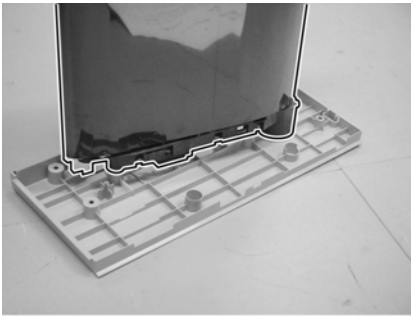
F-7-328

Memo:
This step loosens the ITB and thus facilitates the removal of the ITB.

6) Stand the ITB unit using the right cover (upper rear) detached when the ITB unit was removed. To stand the ITB unit, insert [a] and [b] of the ITB unit frame into the ribs [A] and [B] on the right cover (upper rear).

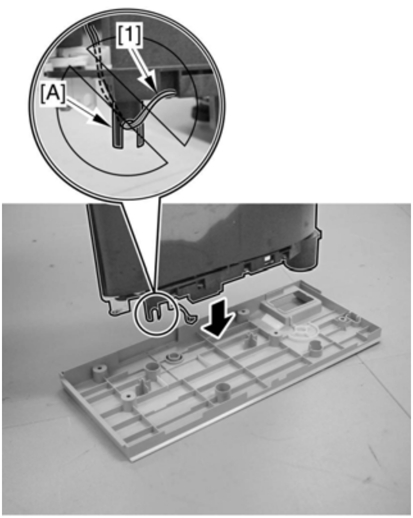


F-7-329



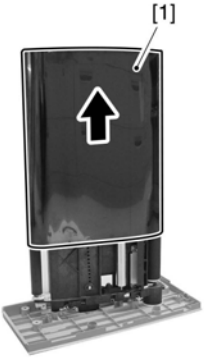
F-7-330

⚠ Care should be taken at this time not to catch the ITB home position sensor cable [1] in the ITB unit frame [A].



F-7-331

7) Pull up the ITB [1] to remove.



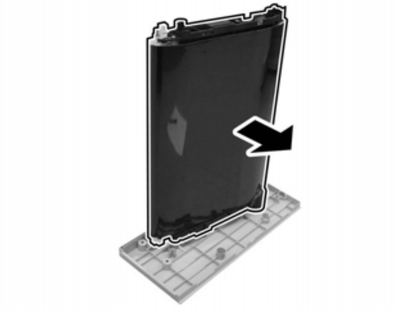
F-7-332

⚠ Note on Falling Down of the ITB Unit

Although the ITB unit stands by means of the right cover (upper rear), it is still very unstable and may fall down.

Care should be taken on the following points when servicing:

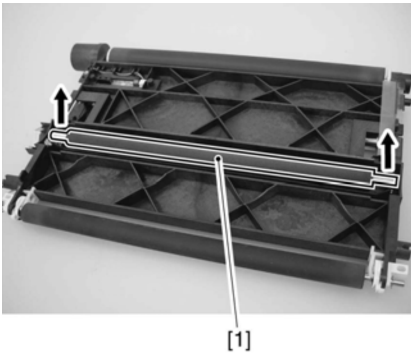
- Work performed by standing the ITB unit is limited to attachment/removal of the ITB. In other words, do not stand the ITB unit for other work (such as cleaning and replacement of parts other than the ITB).
- Be aware that the ITB unit easily falls down when power is applied to the arrow direction in the figure below.



F-7-333

7.10.11.12 Removing the Primary Transfer Roller

1) Lift the primary transfer roller [2] by both its edges to detach it from the bushing assembly.

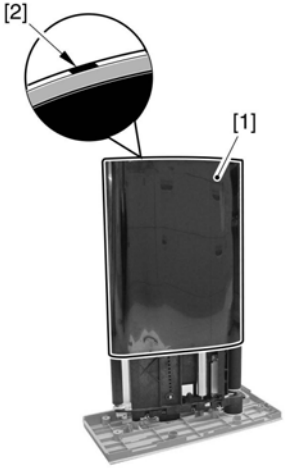


F-7-334

⚠Do not hold it by the sponge or rubber areas.

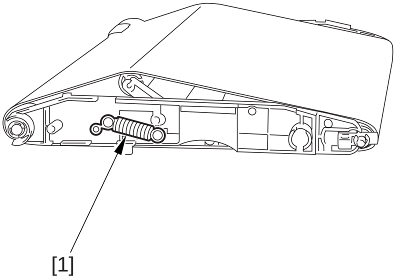
7.10.11.13 Points to Note When Mounting the ITB

- When placing the ITB unit upright, be sure that the drive gear side is at the bottom.
- When mounting the ITB [1], be sure to orient it so that the end with a marking (red) [2] is at the top in the ITB frame.

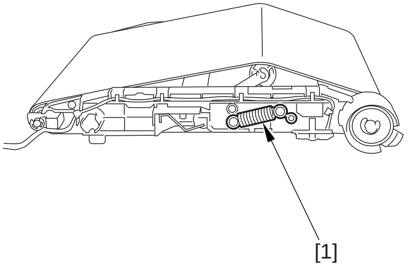


F-7-335

- Orient 2 tension springs [1] as shown in the figure below, and attach them. When they are oriented to the reverse direction, they fail to keep the proper ITB tension, leading to poor transfer or ITB breakage.

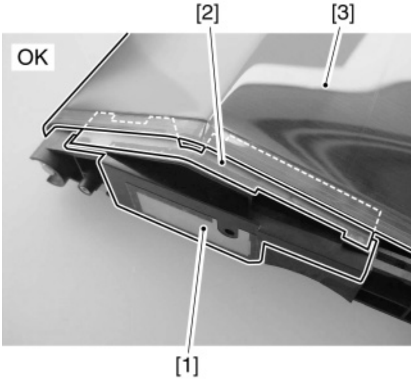


F-7-336

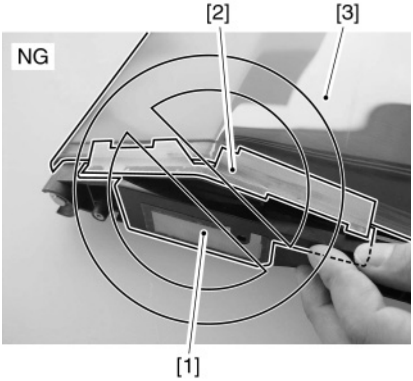


F-7-337

- When mounting the sheet base (front) [1], take full care so that the plastic film [2] will not ride over the ITB [3].

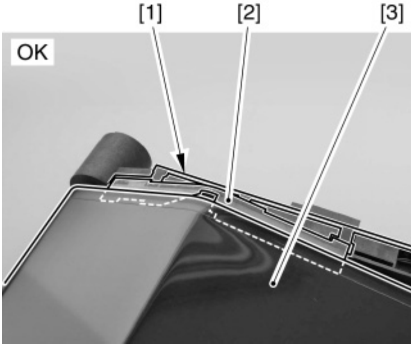


F-7-338

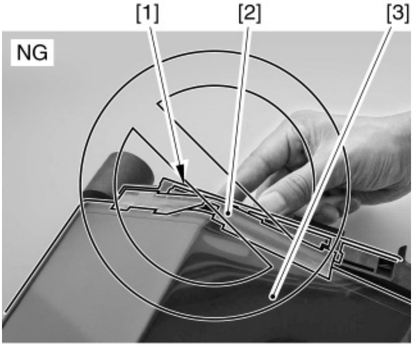


F-7-339

- When mounting the sheet base (rear) [1], be sure that the plastic film [2] will not ride over the ITB [3].



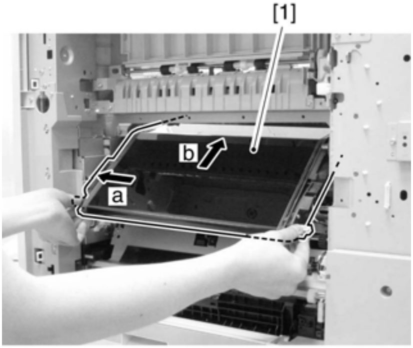
F-7-340



F-7-341

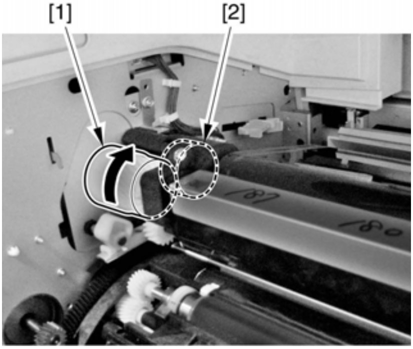
7.10.11.14 Points to Note When Mounting the ITB Unit

- When fitting the ITB unit [1] in the machine, move the unit in the direction of the arrow a (toward the machine front) and then along the rails in the direction of the arrow b.



F-7-342

- When you have fitted the ITB unit in the machine, be sure to give the gear [1] a full turn before tightening the screw to fix it in place. Merely fitting the ITB unit in the machine does not always mean that the gear [1] and the other gear [2] have fully been engaged; the turn will mesh them correctly.

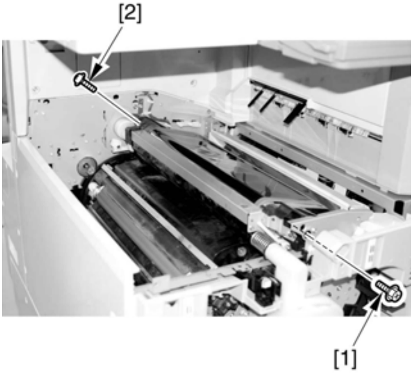


F-7-343

- The gear [1] above is coated with grease; the gear [2] is also coated with grease. If the grease adheres to your hand when rotating the gears, immediately wash your hands. You must not touch the ITB with your hand having the grease on.

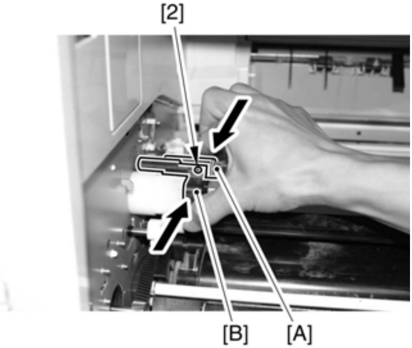
- Follow the steps below to tighten the screws on the ITB unit.

1) Tighten 1 screw [1], and then temporarily tighten 1 screw [2].



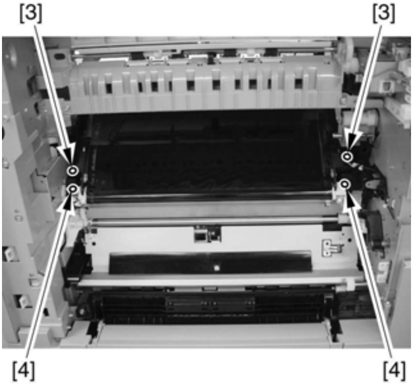
F-7-344

2) Use your fingers to pinch the ITB unit frame [A] and the ITB unit support part [B] in the direction of an arrow, so that there will be no looseness between them. Keep them as they are, and tighten the screw [2].



F-7-345

3) Attach 2 screws [3] (TP screw; M3x6) and 2 screws [4] (binding screw; M4x14). There is no specific order for attaching the two types of screw (i.e., screw [3] and [4]). Therefore, it is possible to attach either of them first.



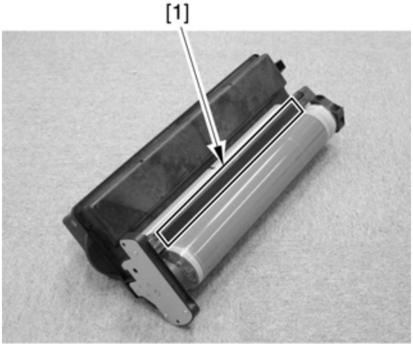
F-7-346

⚠ When failing to follow the proper procedure (Step 2) above) before tightening the screw [2], the rear side of the ITB cleaning blade may not be in complete contact with the ITB, leading to faulty cleaning. Moreover, when failing to attach the screw [1] and the screw [2] in the correct order (i.e., screw [1] => screw [2]), some lines (96.7mm pitch) may appear on the images.

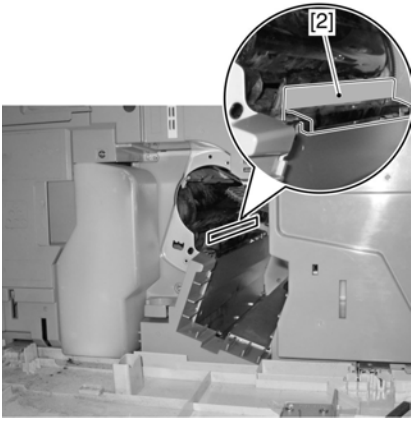
7.10.11.15 Points to Note When Mounting the Drum Unit

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-347



F-7-348

Memo:

The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.11.16 After Replacing the Primary Transfer Roller

Execute the following service mode item:

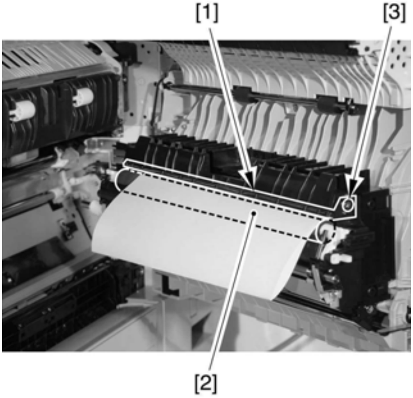
- COPIER>FUNCTION>MISC-P>1ATVC-EX

7.10.12 Secondary Transfer External Roller

7.10.12.1 Removing the Separation Static Eliminator

1) Open the right door.

2) Put paper between the separation static eliminator [1] and the secondary transfer outside roller [2]; then, remove the screws [3], and pull out the separation static eliminator [1] toward the front.



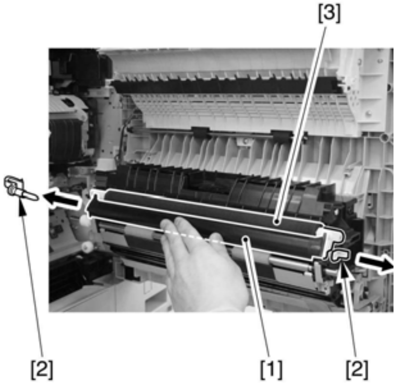
F-7-349

Memo:

It is important to put paper in between to prevent damage to the secondary transfer roller by molded segment of the separation static eliminator when removing the eliminator.

7.10.12.2 Removing the Secondary Transfer Outside Roller

1) While holding down the auxiliary guide [1] by hand, remove the 2 screws [2]; then, detach the secondary transfer outside roller assembly [3].



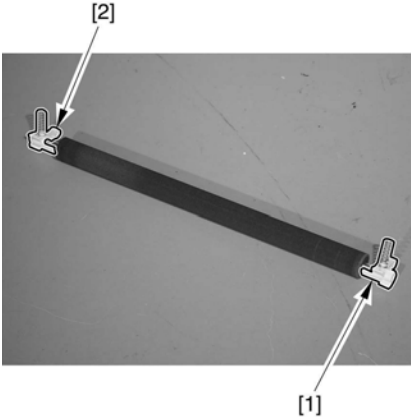
F-7-350

⚠

- Be sure to hold the auxiliary guide and the secondary transfer outside roller in place when removing the pin; otherwise, these parts will slide out by the work of a spring.
- Be sure not to touch the secondary transfer outside roller. Use paper when holding it.

---

2) Detach the arms [1] [2] from the secondary transfer external roller assembly.

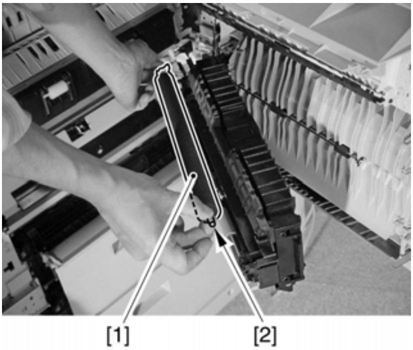


F-7-351

⚠Do not touch the secondary transfer roller. Be sure to use paper when holding it.

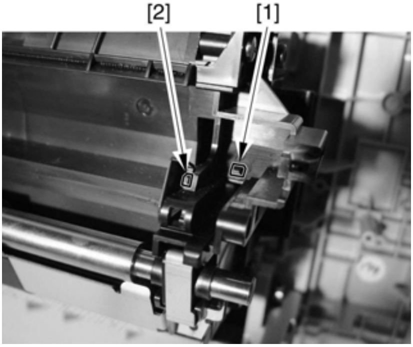
7.10.12.3 Points to Note When Mounting the Secondary Transfer Outside Roller

- Do not touch the secondary transfer outside roller. Use paper when holding it.
- The secondary transfer roller [1] has its own orientation. Be sure to mount it so that the edge with a marking (blue) [2] is toward the front.



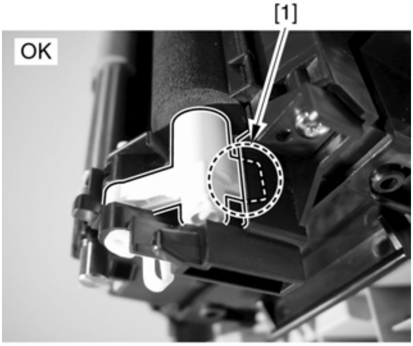
F-7-352

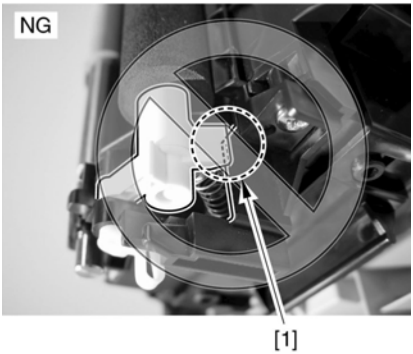
- Be sure that the spring attached to the arm of the secondary transfer outside roller is fitted within the protrusion [1]. Also, be sure that the spring attached to the auxiliary guide is within in the protrusion [2].



F-7-353

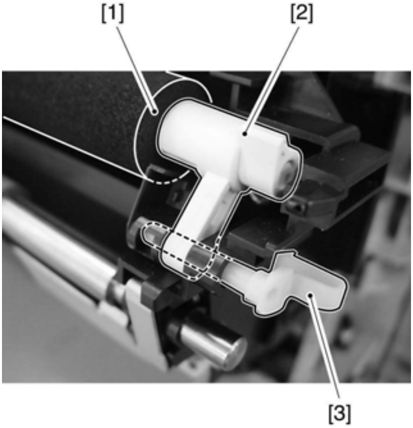
- Be sure that the claw [1] of the arm found on both edges of the secondary transfer roller assembly are inside the frame.



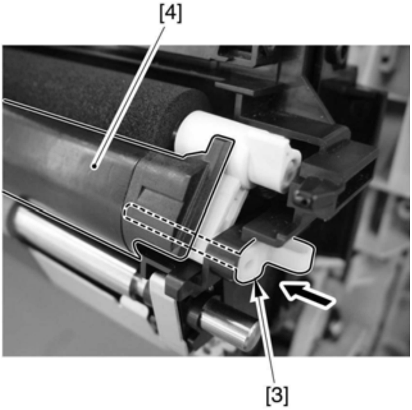


F-7-354

- When fixing the arm [2] of the secondary transfer outside roller [1] by means of a pin [3], keep the pin half way; thereafter, push the pin fully inside when mounting the auxiliary guide [4].



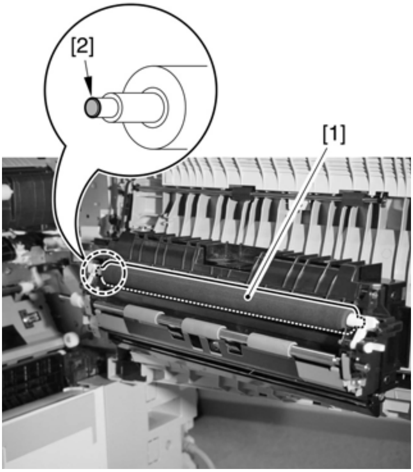
F-7-355



F-7-356

7.10.12.4 After Replacing the Secondary Transfer Outside Roller

- If you have replaced the secondary transfer outside roller, be sure to apply about 10 mg of grease (FY9-6008) to the end [2] (side without the blue marking) at the rear of the secondary transfer outside roller [1].

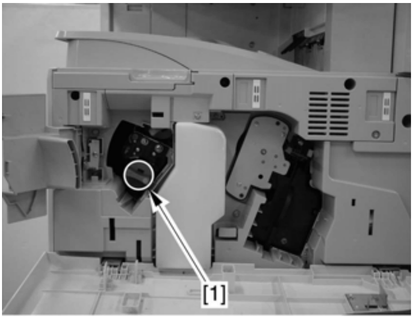


F-7-357

7.10.13 Secondary Transfer Internal Roller

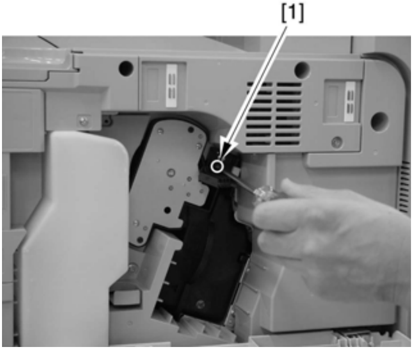
7.10.13.1 Removing the Drum Unit

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



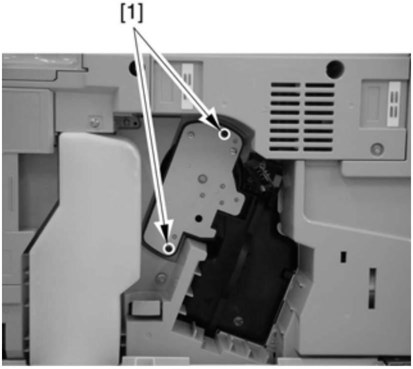
F-7-358

2) Remove the screw [1] (black; M3x20).



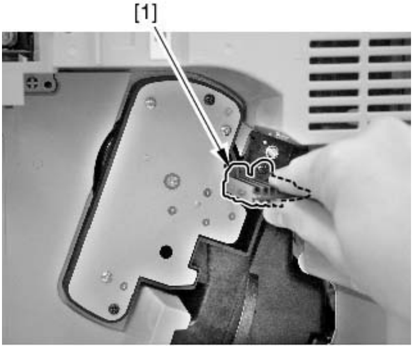
F-7-359

3) Remove the 2 fixing screws [1] (M4x20).

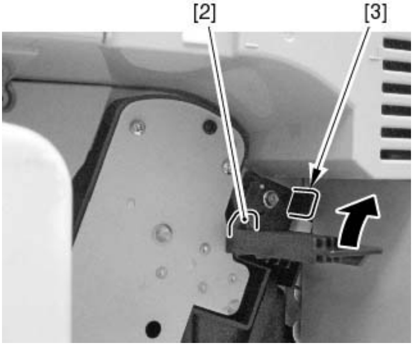


F-7-360

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

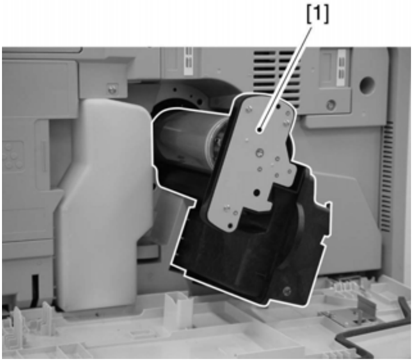


F-7-361



F-7-362

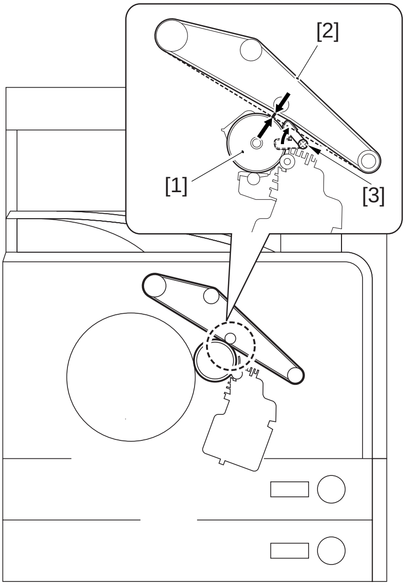
5) Slide out the drum unit [1] to the front to detach.



F-7-363

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



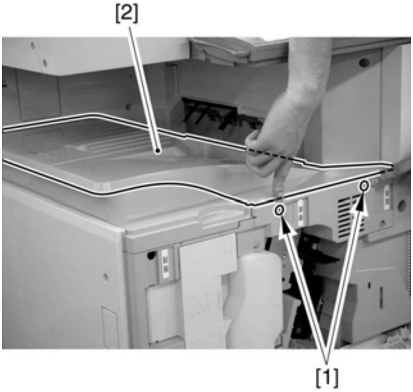
F-7-364

At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.13.2 Removing the Delivery Tray

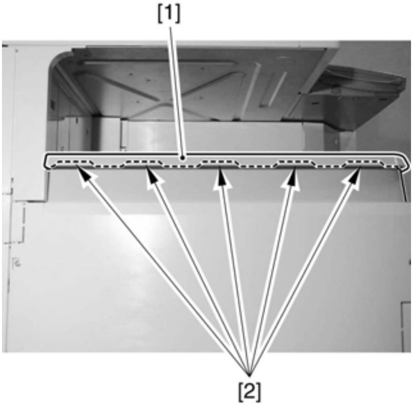
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-365

⚠Points to Note When Mounting the Delivery Tray

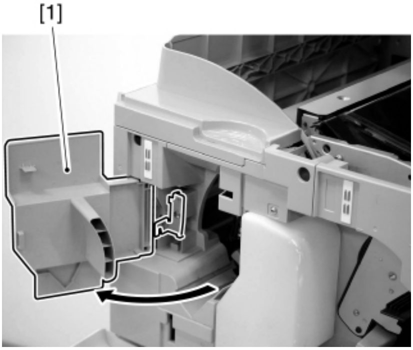
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-366

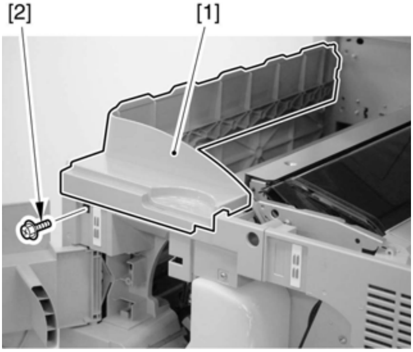
7.10.13.3 Removing the Delivery Tray Lower Cover

1) Open the toner cartridge access cover [1].



F-7-367

2) Remove the screw [2], and detach the delivery tray lower cover [1].

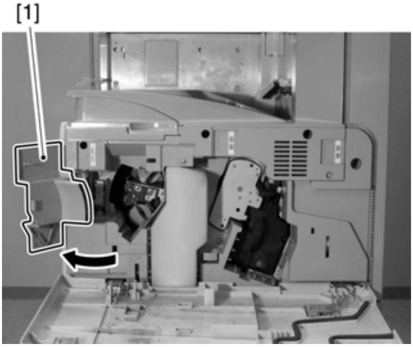


F-7-368

7.10.13.4 Removing the waste toner unit retainer

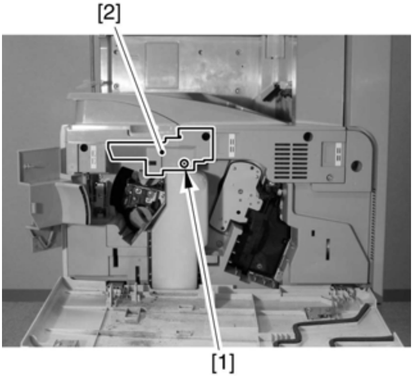
1) Open the front cover.

2) Open the toner container access cover [1].



F-7-369

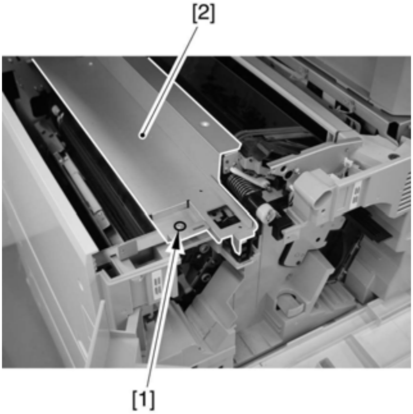
3) Remove the TP screw [1], and detach the waste toner unit retainer [2].



F-7-370

7.10.13.5 Removing the protective plate

1) Remove the screw [1], and detach the protective plate [2].

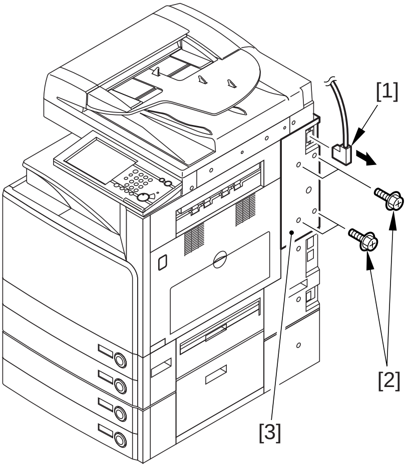


F-7-371

7.10.13.6 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

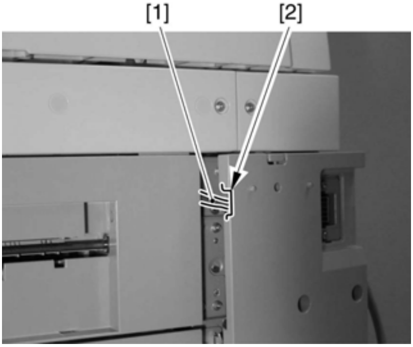
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-372

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

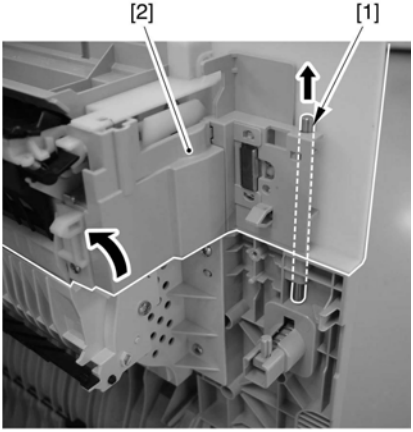


F-7-373

7.10.13.7 Removing the Right Door

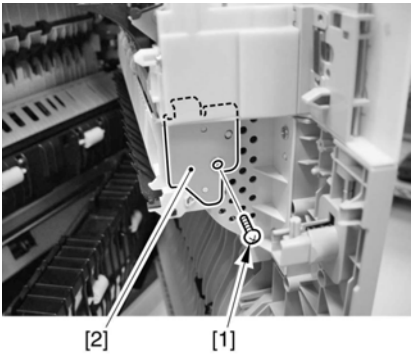
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-374

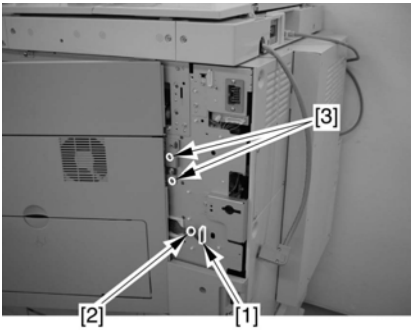
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-375

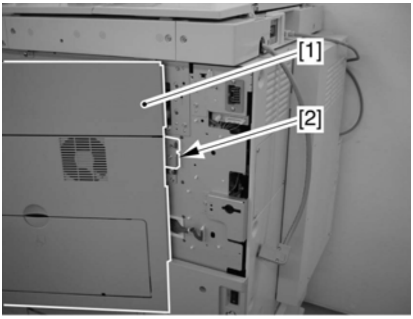
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-376

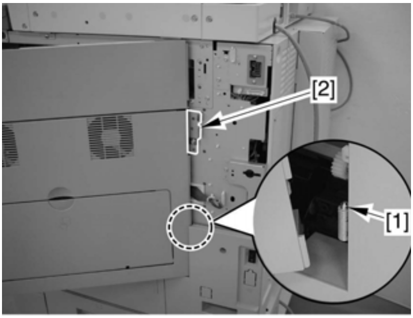
6) Detach the right door [1] together with the hinge [2].



F-7-377

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

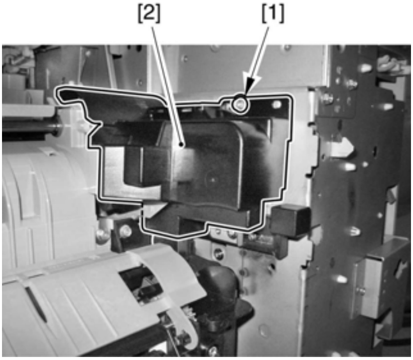


F-7-378

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

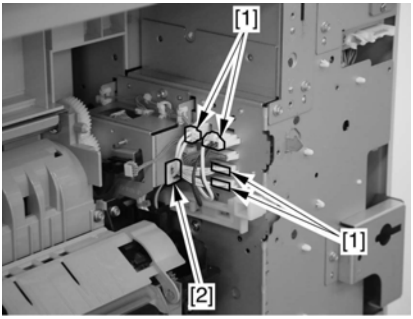
7.10.13.8 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



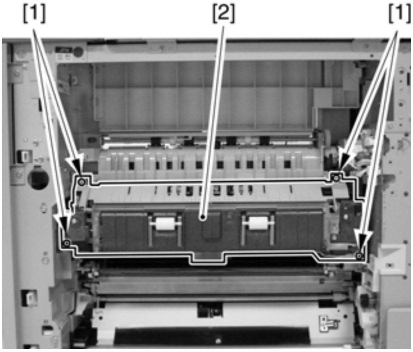
F-7-379

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-380

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-7-381

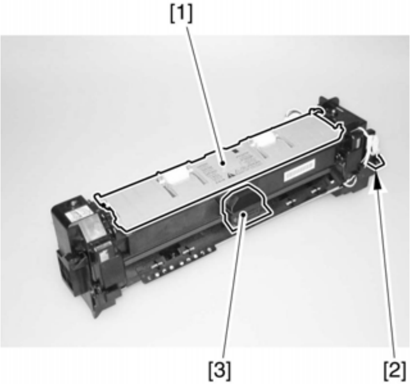
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠Placing the Fixing Assembly

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-7-382

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

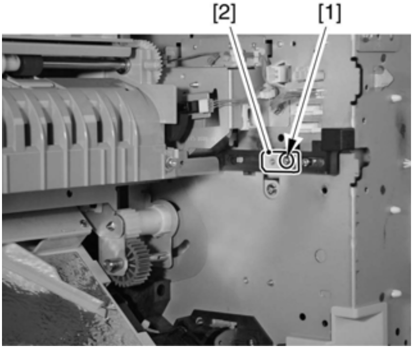
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

7.10.13.9 Removing the Fixing Release Arm Plate

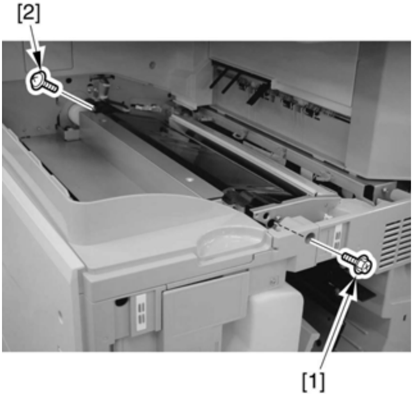
1) Remove the screw [1], and detach the plate [2].



F-7-383

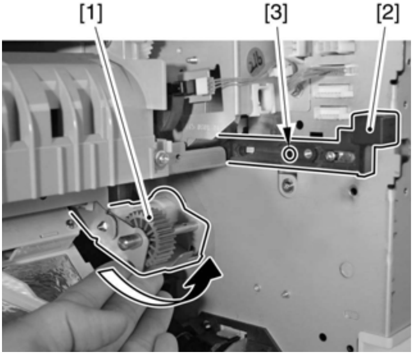
7.10.13.10 Removing the Intermediate Transfer Unit (ITB unit)

1) Remove the screw [1], and remove the screw [2].

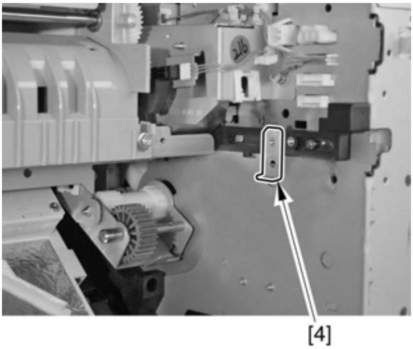


F-7-384

2) With the fixing drive gear assembly [1] fully lifted in the direction of the arrow, fit the previously removed fixing release arm plate [4] into the hole of the fixing release arm [2] to hold the fixing drive gear assembly [1] in place.



F-7-385



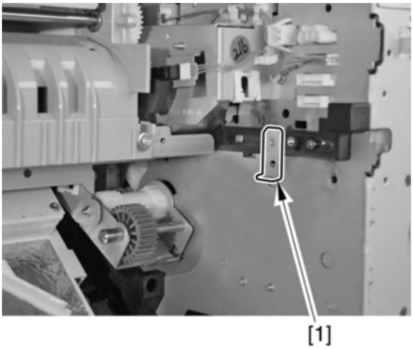
F-7-386

Memo:
Step 2) is performed so that the ITB unit and the fixing drive gear assembly will not interfere with each other when the ITB unit is removed.

⚠Be sure to put back the fixing release arm plate used to hold the fixing drive gear assembly in place as follows when mounting the ITB unit:

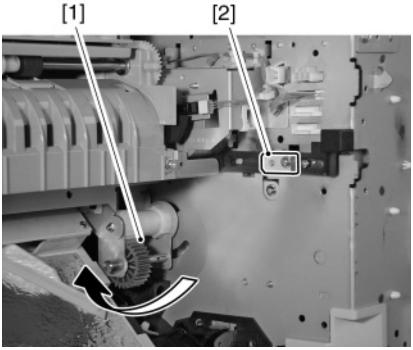
1) If you have attached the delivery tray, remove it for the time being.
If the fixing release arm plate is mounted in the presence of the delivery tray, the fixing release arm (rear) will get stuck on the boss of the delivery tray, preventing transmission of drive to the fixing roller.

2) Remove the fixing release arm plate [1] so that the fixing drive gear assembly will be freed.



F-7-387

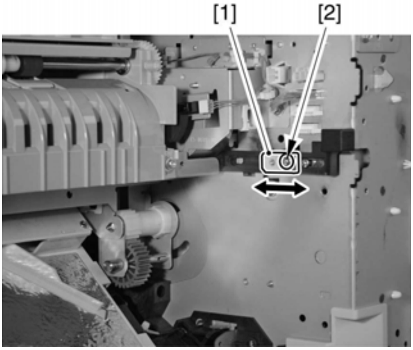
3) With the fixing drive gear assembly [1] fully moved by hand in the direction of the arrow, fit the fixing releasing arm plate [2] in to the hole to secure it in place.



F-7-388

4) Fix the fixing releasing arm plate [1] in place using a screw [2]. Thereafter, try moving the fixing release arm back and forth to be sure that the fixing drive gear

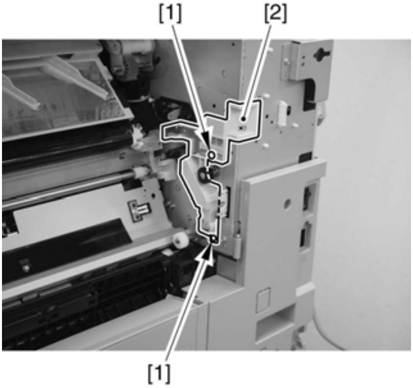
assembly moves in response.



F-7-389

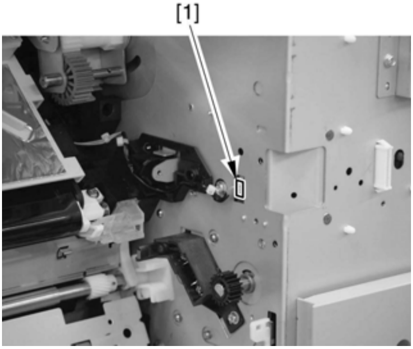
---

3) Remove 2 screws [1], and detach the contact guide [2].



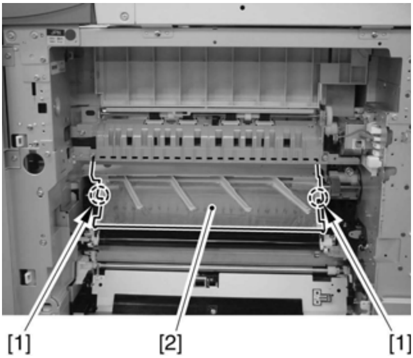
F-7-390

4) Disconnect the connector [1], and free the cable from the cable guide.



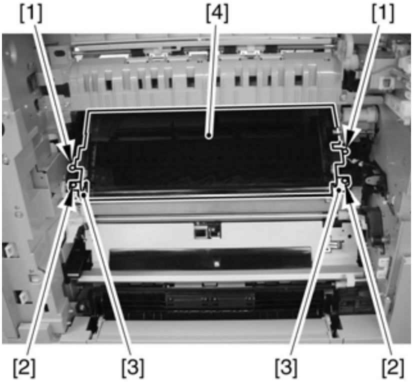
F-7-391

5) Lift the 2 points of the ITB fan duct [1] to free the claw; then, detach the ITB fan duct [2].



F-7-392

6) Remove the 2 screws [1] (TP; M3x6) and the 2 screws [2] (binding; M4x14); then, lift the 2 grips [3] to detach from the bushing assembly, and detach the ITB unit



F-7-393

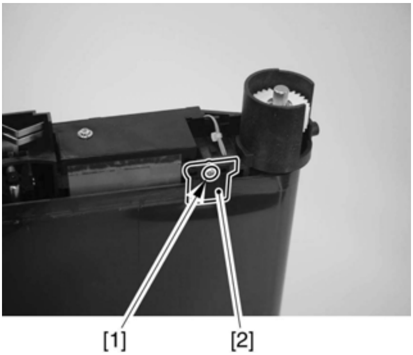
⚠When removing the ITB unit, be sure to take full care not to touch or damage the ITB. When you have removed the ITB unit, try not to place it on the floor or a desk without paper under it.

⚠If you must leave the ITB unit alone for a long time after removing it, be sure to cover the surface of the photosensitive drum to protect it against light.

7.10.13.11 Removing the Intermediate Transfer Belt (ITB)

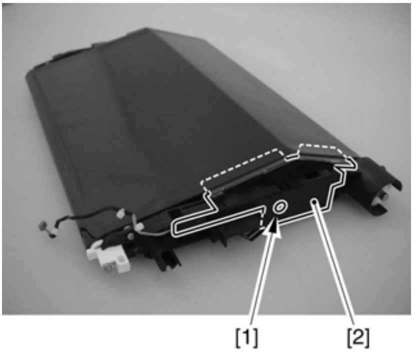
⚠Do not place the ITB unit directly on the floor or a desk. Be sure to place paper underneath.

1) Remove the screw [1], and detach the ITB retainer [2].



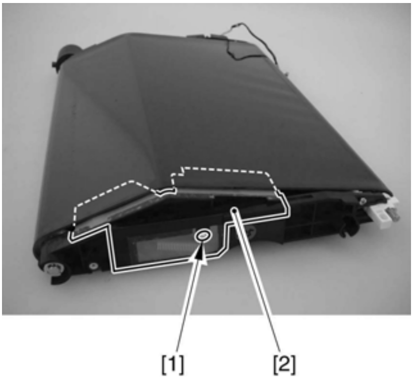
F-7-394

2) Remove the screw [1], and detach the sheet base (rear) [2].



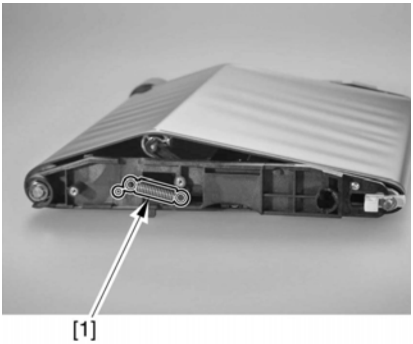
F-7-395

3) Remove the screw [1], and detach the sheet base (front) [2].

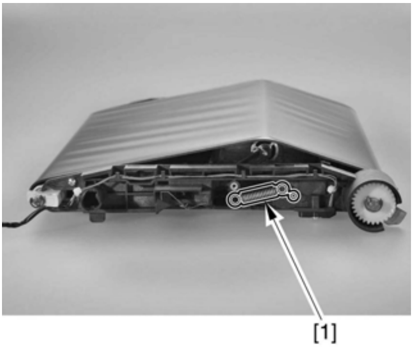


F-7-396

4) Remove the 2 tension springs [1].

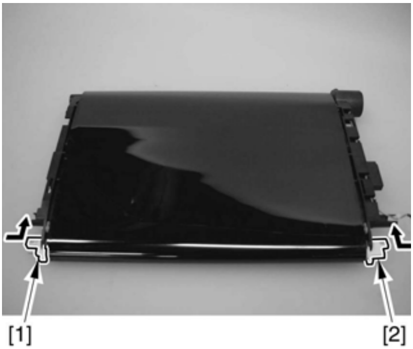


F-7-397



F-7-398

5) While pushing the bushings [1] and [2] of the secondary transfer inside roller toward the inside, slide them in the direction of the arrows until they stop.

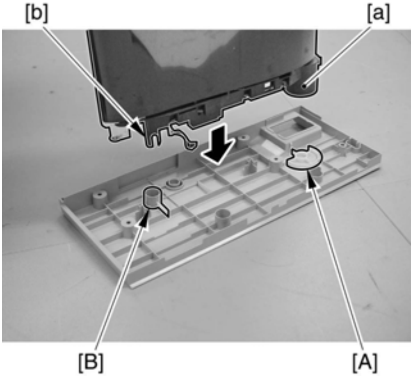


F-7-399

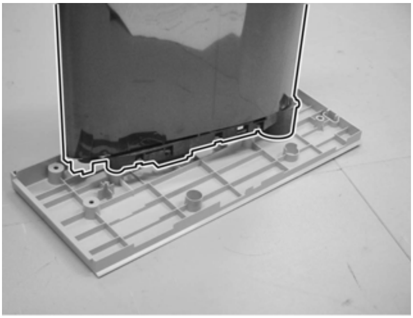
Memo:
This step loosens the ITB and thus facilitates the removal of the ITB.

---

6) Stand the ITB unit using the right cover (upper rear) detached when the ITB unit was removed. To stand the ITB unit, insert [a] and [b] of the ITB unit frame into the ribs [A] and [B] on the right cover (upper rear).

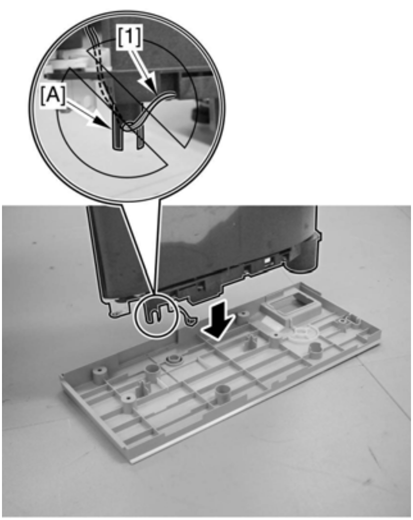


F-7-400



F-7-401

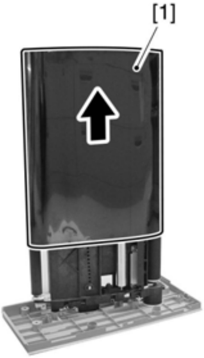
⚠ Care should be taken at this time not to catch the ITB home position sensor cable [1] in the ITB unit frame [A].



F-7-402

---

7) Pull up the ITB [1] to remove.



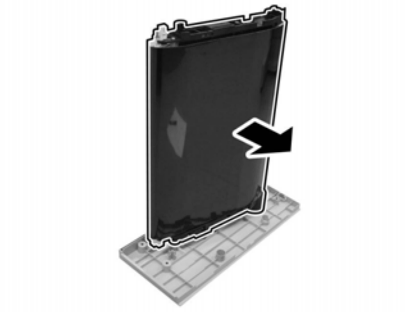
F-7-403

⚠ Note on Falling Down of the ITB Unit

Although the ITB unit stands by means of the right cover (upper rear), it is still very unstable and may fall down.

Care should be taken on the following points when servicing:

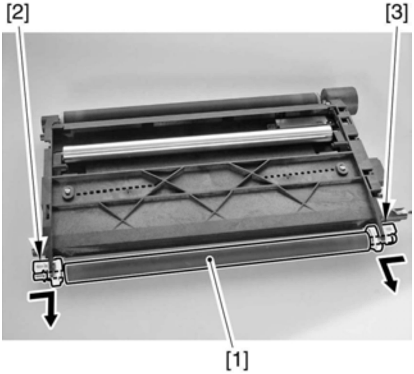
- Work performed by standing the ITB unit is limited to attachment/removal of the ITB. In other words, do not stand the ITB unit for other work (such as cleaning and replacement of parts other than the ITB).
- Be aware that the ITB unit easily falls down when power is applied to the arrow direction in the figure below.



F-7-404

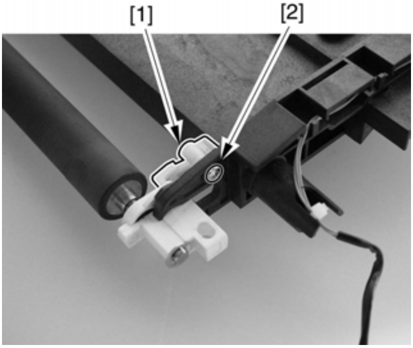
7.10.13.12 Removing the Secondary Transfer Inside Roller

1) While pushing the bushings [2] and [3] of the secondary transfer roller assembly [1] toward the inside, slide them out in the direction of arrows until they stop.

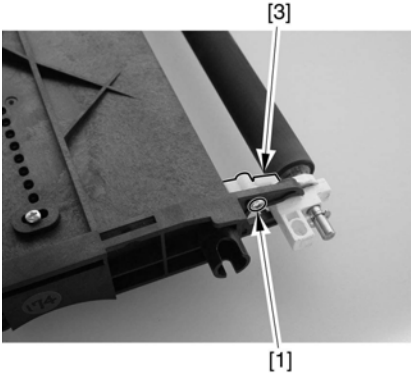


F-7-405

2) Remove the 2 screws [1], and detach the roller support members [2] and [3].

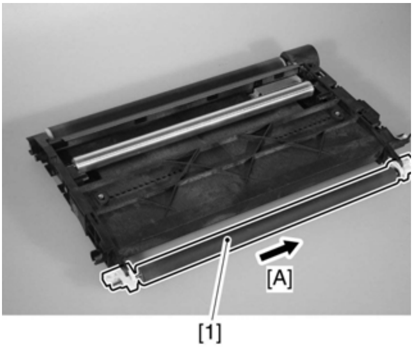


F-7-406

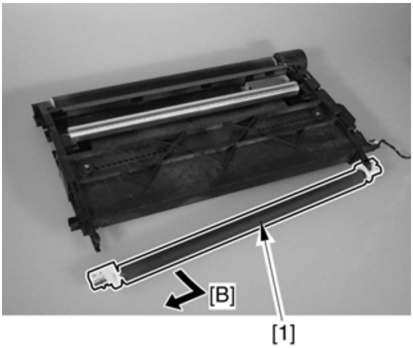


F-7-407

3) Move the secondary transfer inside roller assembly [1] in the direction of the arrow [A] unit it stops; then, move it in the direction of the arrow [B] to detach.

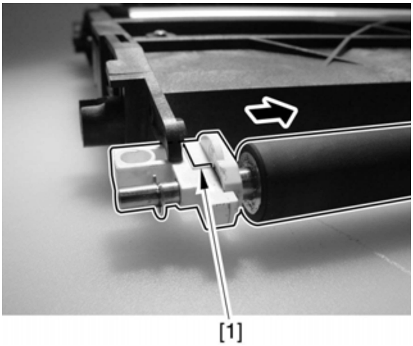


F-7-408



F-7-409

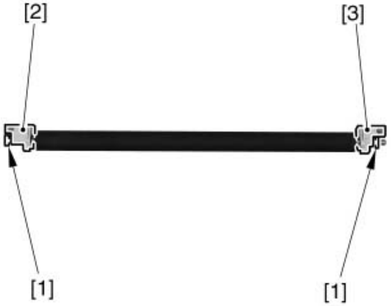
Memo:
Move the secondary transfer inside roller in the direction of the arrow so that you can remove the protrusion [1].



F-7-410

---

4) Remove the 2 E-rings [1], and detach the bushing [2] and the other bushing [3].

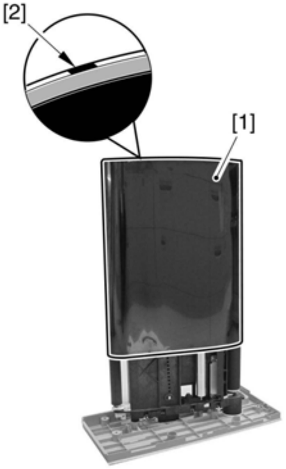


F-7-411

⚠Be sure not to hold the rubber portion of the secondary transfer inside roller.

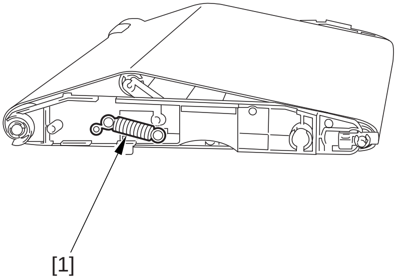
7.10.13.13 Points to Note When Mounting the ITB

- When placing the ITB unit upright, be sure that the drive gear side is at the bottom.
- When mounting the ITB [1], be sure to orient it so that the end with a marking (red) [2] is at the top in the ITB frame.

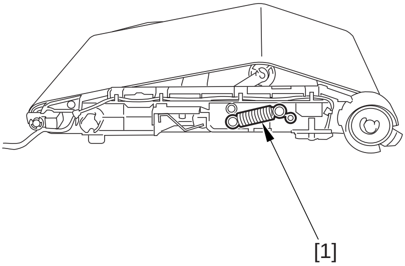


F-7-412

- Orient 2 tension springs [1] as shown in the figure below, and attach them. When they are oriented to the reverse direction, they fail to keep the proper ITB tension, leading to poor transfer or ITB breakage.

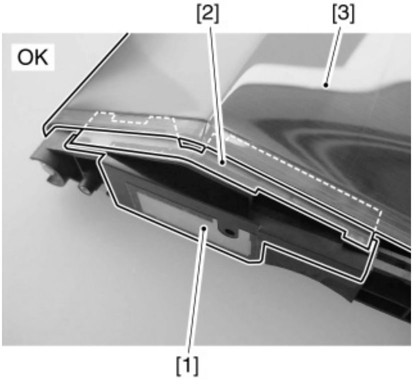


F-7-413

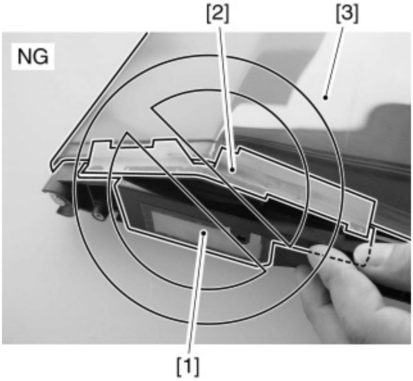


F-7-414

- When mounting the sheet base (front) [1], take full care so that the plastic film [2] will not ride over the ITB [3].

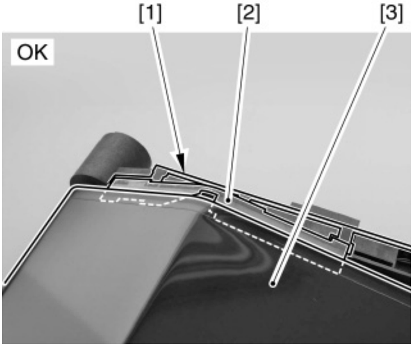


F-7-415

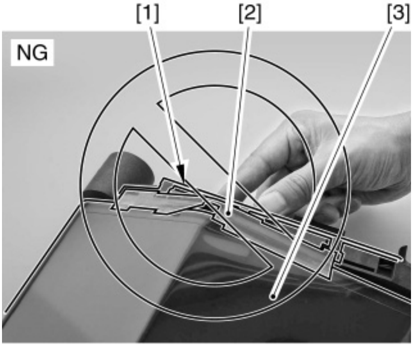


F-7-416

- When mounting the sheet base (rear) [1], be sure that the plastic film [2] will not ride over the ITB [3].



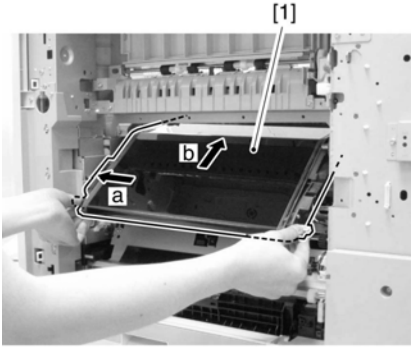
F-7-417



F-7-418

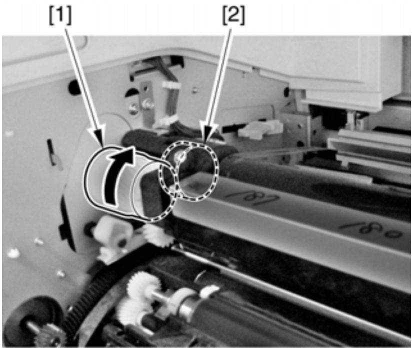
7.10.13.14 Points to Note When Mounting the ITB Unit

- When fitting the ITB unit [1] in the machine, move the unit in the direction of the arrow a (toward the machine front) and then along the rails in the direction of the arrow b.



F-7-419

- When you have fitted the ITB unit in the machine, be sure to give the gear [1] a full turn before tightening the screw to fix it in place. Merely fitting the ITB unit in the machine does not always mean that the gear [1] and the other gear [2] have fully been engaged; the turn will mesh them correctly.

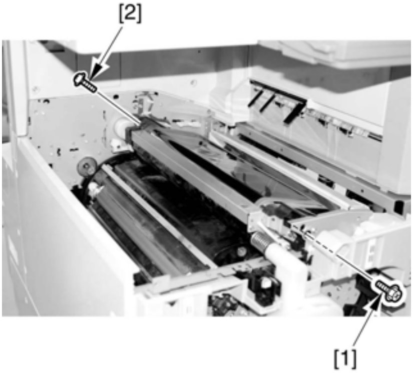


F-7-420

- The gear [1] above is coated with grease; the gear [2] is also coated with grease. If the grease adheres to your hand when rotating the gears, immediately wash your hands. You must not touch the ITB with your hand having the grease on.

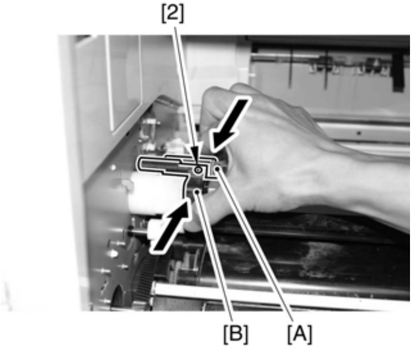
- Follow the steps below to tighten the screws on the ITB unit.

1) Tighten 1 screw [1], and then temporarily tighten 1 screw [2].



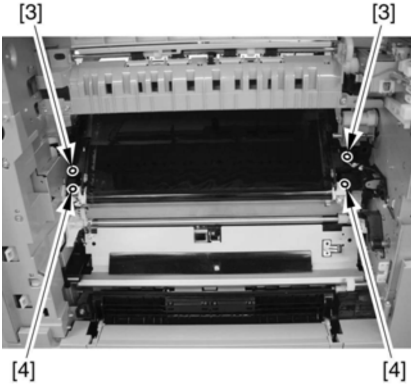
F-7-421

2) Use your fingers to pinch the ITB unit frame [A] and the ITB unit support part [B] in the direction of an arrow, so that there will be no looseness between them. Keep them as they are, and tighten the screw [2].



F-7-422

3) Attach 2 screws [3] (TP screw; M3x6) and 2 screws [4] (binding screw; M4x14). There is no specific order for attaching the two types of screw (i.e., screw [3] and [4]). Therefore, it is possible to attach either of them first.



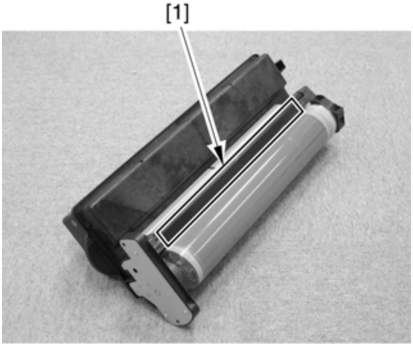
F-7-423

⚠ When failing to follow the proper procedure (Step 2) above) before tightening the screw [2], the rear side of the ITB cleaning blade may not be in complete contact with the ITB, leading to faulty cleaning. Moreover, when failing to attach the screw [1] and the screw [2] in the correct order (i.e., screw [1] => screw [2]), some lines (96.7mm pitch) may appear on the images.

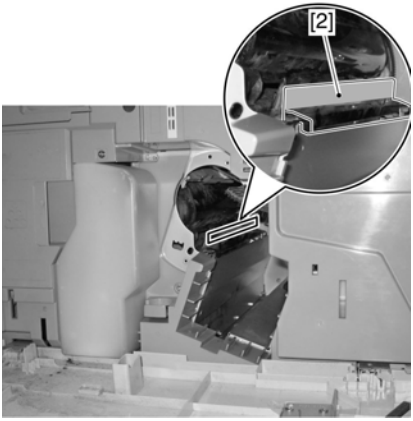
7.10.13.15 Points to Note When Mounting the Drum Unit

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-424



F-7-425

Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.14 ITB Cleaning Blade

7.10.14.1 Preparing for the Removal of the ITB Cleaning Unit

1) Turn on the main power switch.
2) Make the following selections in service mode, and press the OK key:
- COPIER>FUNCTION>MISC-P>ITB-CLSW

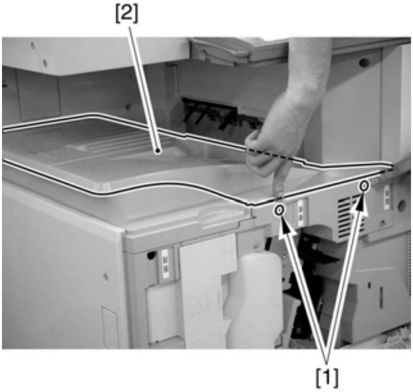
While the mode is being executed, the screen flashes 'ACTIVE'; it changes to 'OK!' at the end of the execution.
3) Turn off the control panel power switch; then, wait for 15 sec or more, and turn off the main power switch.

Memo:
The machine operates as follows in response to the execution of this service mode:
- it changes the position of the developing assembly rotary. (If the developing cylinder is positioned immediately under the ITB cleaning unit, the base of the ITB cleaning unit can rub against the surface of the developing cylinder to cause damage. The developing assembly rotary is rotated so that the Bk toner cartridge is positioned immediately under the ITB cleaning unit.)
- if a Finisher-P1 is installed, the finisher delivery tray is moved as far up as it moves. (If the finisher delivery tray is in down position, mounting the ITB cleaning unit can prove to be difficult.)

7.10.14.2 Removing the Delivery Tray

1) Open the front cover.

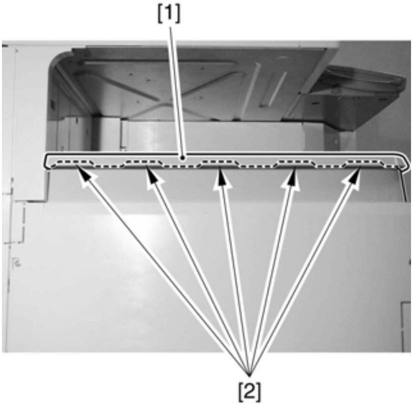
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-426

Points to Note When Mounting the Delivery Tray

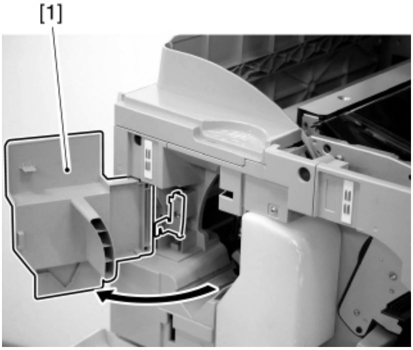
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-427

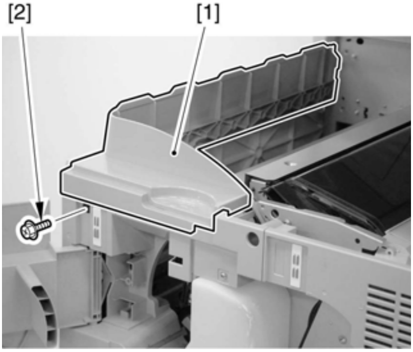
7.10.14.3 Removing the Delivery Tray Lower Cover

1) Open the toner cartridge access cover [1].



F-7-428

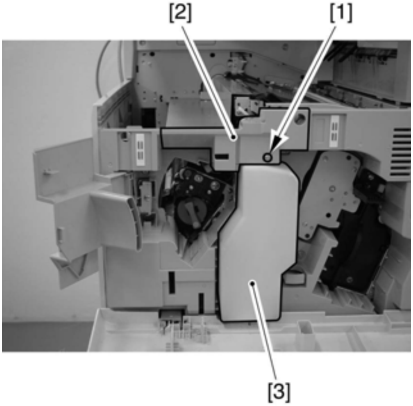
2) Remove the screw [2], and detach the delivery tray lower cover [1].



F-7-429

7.10.14.4 Removing the ITB Waste Toner Unit

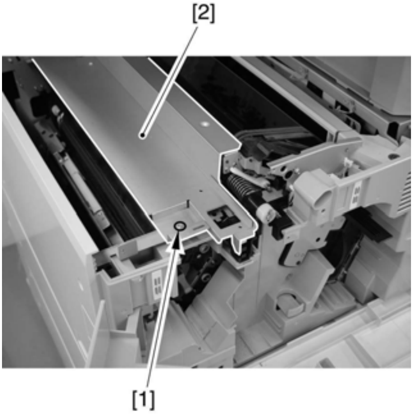
1) Remove the screw [1], and detach the waste toner unit retainer [2]; then, detach the ITB waste toner unit [3].



F-7-430

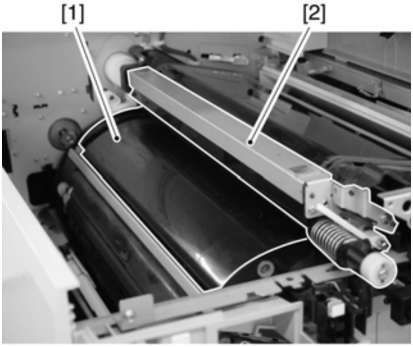
7.10.14.5 Removing the ITB Cleaning Unit

1) Remove the screw [1], and detach the protective plate [2].



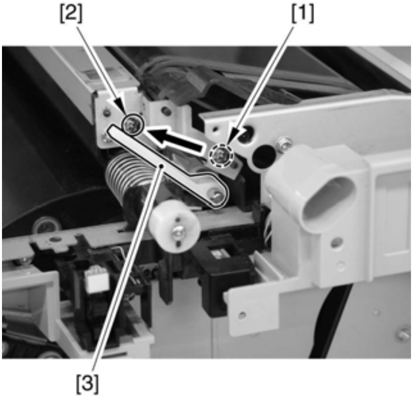
F-7-431

2) Check to be sure that the toner cartridge (Bk) [1] is positioned under the ITB cleaning unit [2]. If not, turn the developing assembly rotary by hand so that the toner cartridge (Bk) moves to a point immediately under the ITB cleaning unit.



F-7-432

3) Remove the screw [1], and fit the screw to the screw hole [2].

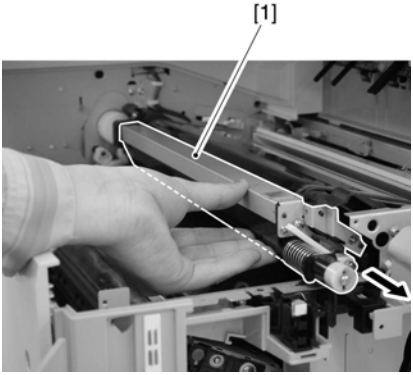


F-7-433

Memo:
To fix the arm [3] in place, fit the screw in the screw hole [2].
If the arm is not fixed in place, the cleaning blade will come into contact with the ITB when the ITB cleaning unit is removed, damaging the ITB.

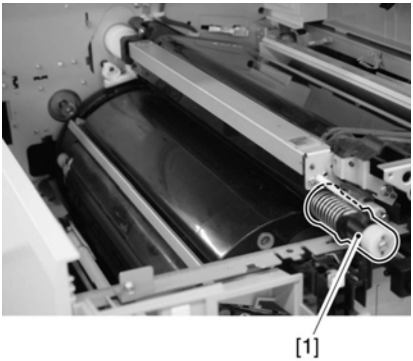
---

4) Slide out the ITB cleaning unit [1] to the front to detach.



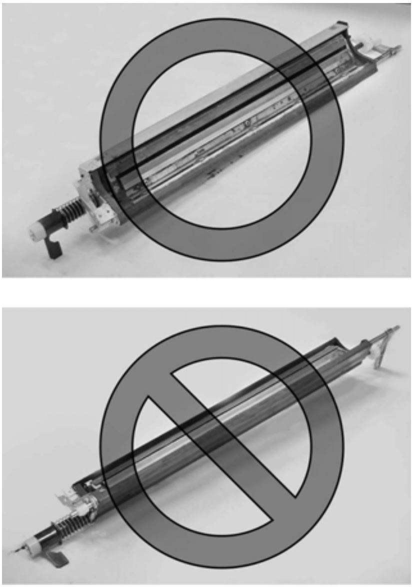
F-7-434

⚠When removing the ITB cleaning unit, take care not to impose excess force on the nozzle area [1] of the unit; otherwise, the area can suffer damage.



F-7-435

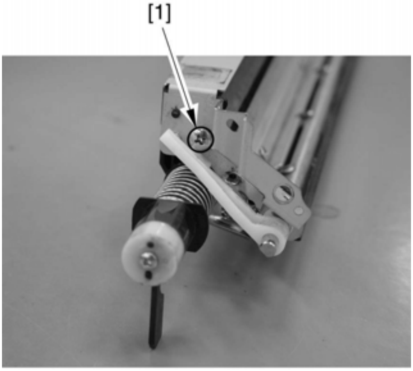
⚠If you have to place the ITB cleaning unit on the floor after removing it from the machine, be sure to orient it as shown (i.e., so that the releasing arm is parallel with the floor); otherwise, the waste toner inside the ITB cleaning unit can start to leak.



F-7-436

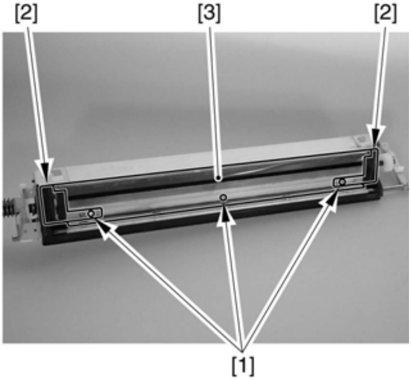
7.10.14.6 Removing the ITB Cleaning Blade

1) Remove the screw [1] that you fitted before removing the ITB cleaning unit.



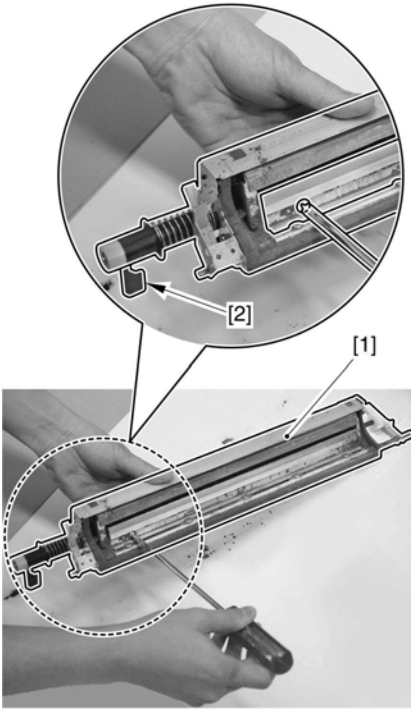
F-7-437

2) Remove the 3 screws [1], and detach the 2 end seal members [2] and the ITB cleaning blade [3].



F-7-438

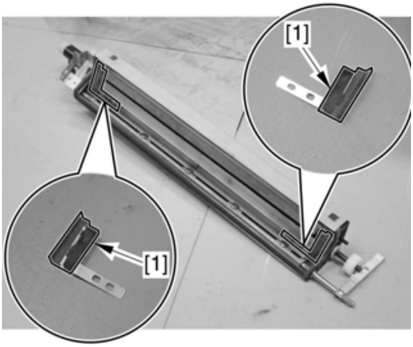
⚠When removing or fitting the fixing screw of the ITB cleaning blade, keep the ITB cleaning unit assembly [1] lifted with your hand so that the shutter assembly [2] will not come into contact with the floor. The resulting excess force can damage the shutter assembly.



F-7-439

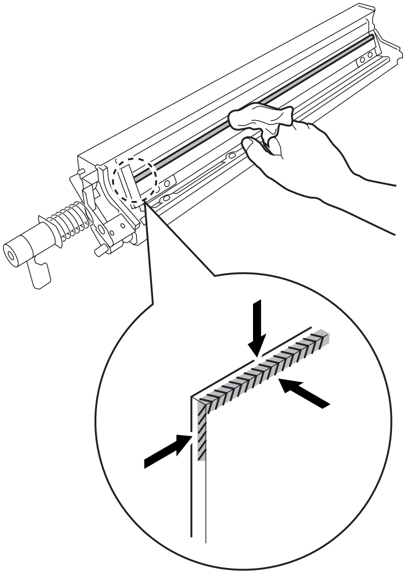
7.10.14.7 Point to Note When Replacing the ITB Cleaning Blade

- When replacing the ITB cleaning blade, be sure to remove the waste toner collecting in the brush assembly [1] of the end seal member.



F-7-440

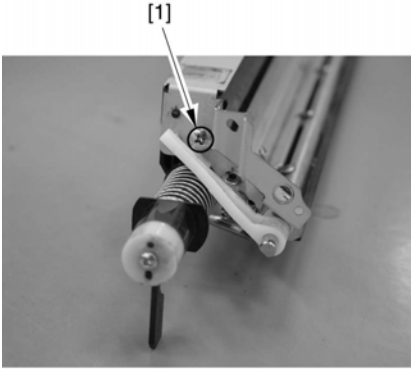
- Apply the lubricant (Tool No: TKN-0480) to the edge of the ITB cleaning blade (the shaded part in the figure below). When applying the lubricant, place the lint-free paper on the part and pat it with your finger.



F-7-441

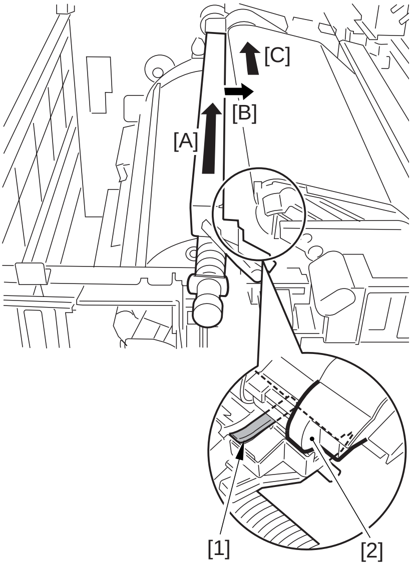
7.10.14.8 Points to Note When Mounting the ITB Cleaning Unit

- Be sure that the screw [1] is fitted to the ITB cleaning unit before mounting the ITB cleaning unit to the machine. Otherwise, the ITB cleaning blade will remain in contact with the ITB, damaging the ITB when the ITB cleaning unit is being mounted.

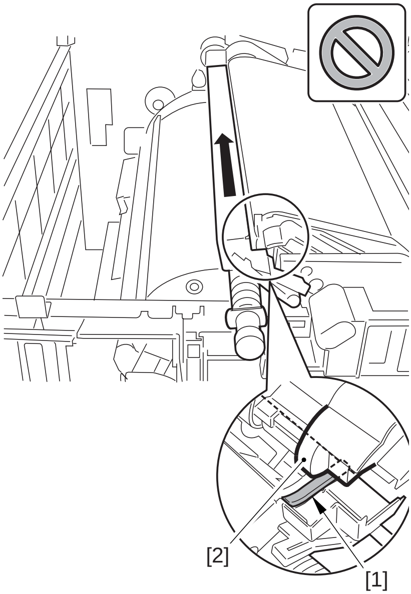


F-7-442

- When carelessly attaching the ITB cleaning unit to the main body, the end seal [1] may be tilted to clash the ITB unit guide assembly [2] (the surface indicated by a heavy line in the figure), and the seal may get deformed or removed. This damage on the seal may result in scattering of the waste toner inside the machine. To prevent this scattering, attach the ITB cleaning unit in the following steps: [A] Slant the front edge of the ITB cleaning unit toward the left, and insert the ITB cleaning unit toward the rear side of the machine temporally; [B] Move the unit until it becomes parallel to the ITB, ensuring that the end seal [1] does not clash the ITB unit guide assembly [2] (the surface indicated by a heavy line in the figure); [C] Push the unit straight to the rear side of the machine.

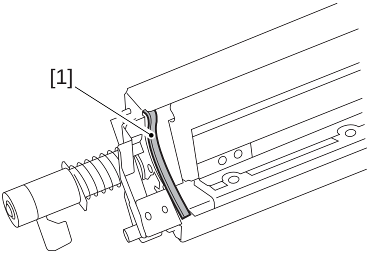


F-7-443

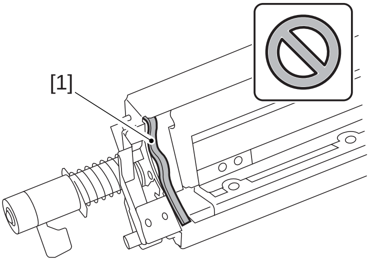


F-7-444

Memo: The figures below show the end seal [1] in normal condition and the one in abnormal condition (upward-tilted one).

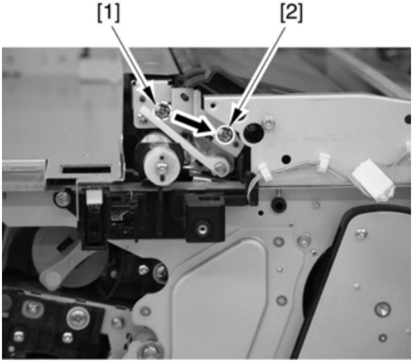


F-7-445



F-7-446

- After mounting the ITB cleaning unit to the machine, be sure to put back the screw [1] where the screw [2] is found. Otherwise, there will be a gap to the ITB cleaning blade, preventing cleaning of the ITB.



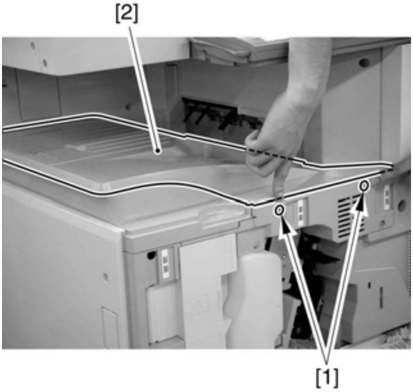
F-7-447

7.10.15 ITB Fan

7.10.15.1 Removing the Delivery Tray

1) Open the front cover.

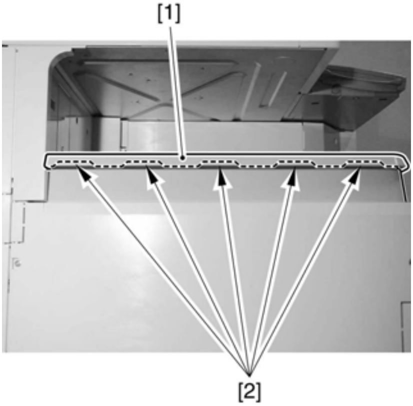
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-448

⚠Points to Note When Mounting the Delivery Tray

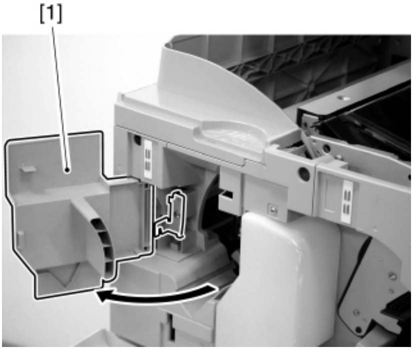
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-449

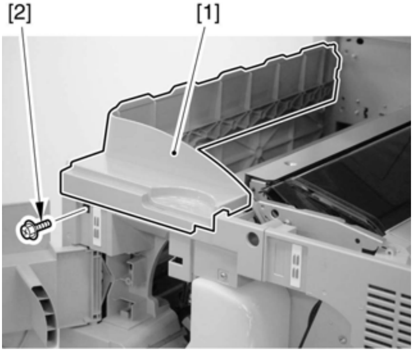
7.10.15.2 Removing the Delivery Tray Lower Cover

1) Open the toner cartridge access cover [1].



F-7-450

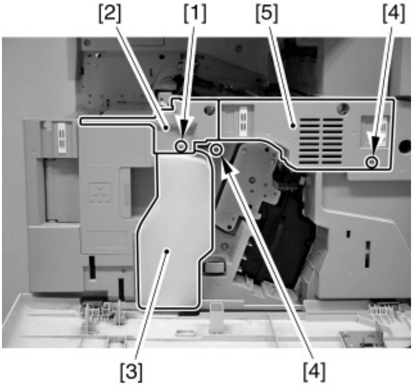
2) Remove the screw [2], and detach the delivery tray lower cover [1].



F-7-451

7.10.15.3 Removing the ITB Cleaning Fan

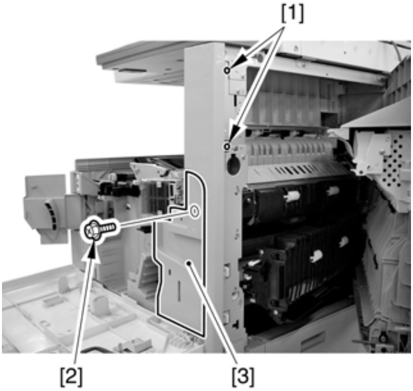
1) Remove the screw [1], and detach the waste toner unit retainer [2] and the ITB waste toner unit [3]; then, remove the two screws [4], and detach the inside cover (middle)



F-7-452

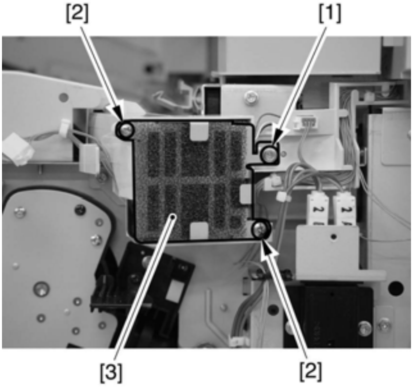
2) Open the right door, and loosen the 2

screws [1]; then, remove the screw [2], and detach the support cover (right) [3].



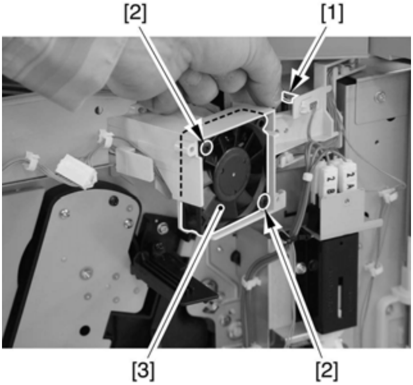
F-7-453

3) Remove the screw [1] and the other 2 screws [2];then, detach the ITB cooling fan cover [3].



F-7-454

4) Disconnect the connector [1], and remove the 2 screws [2]; then, detach the ITB cooling fan [3].



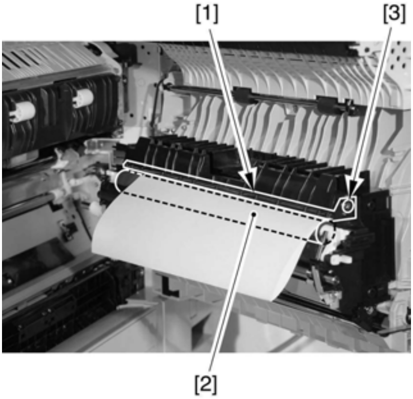
F-7-455

7.10.16 Separator Eliminator

7.10.16.1 Removing the Separation Static Eliminator

1) Open the right door.

2) Put paper between the separation static eliminator [1] and the secondary transfer outside roller [2]; then, remove the screws [3], and pull out the separation static eliminator [1] toward the front.



F-7-456

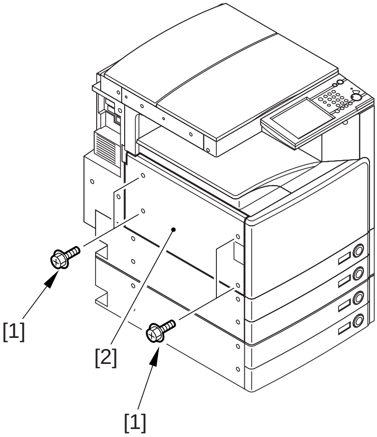
Memo:

It is important to put paper in between to prevent damage to the secondary transfer roller by molded segment of the separation static eliminator when removing the eliminator.

7.10.17 ATR Sensor Unit

7.10.17.1 Removing the Left Cover

1) Remove the 4 screws [1], and detach the left cover [2].

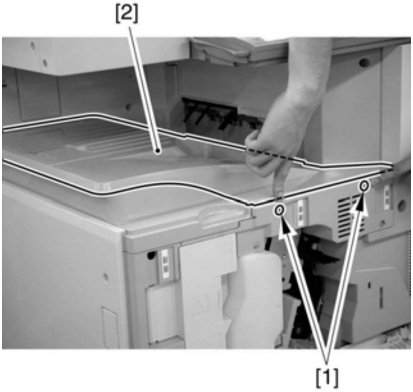


F-7-457

7.10.17.2 Removing the Delivery Tray

1) Open the front cover.

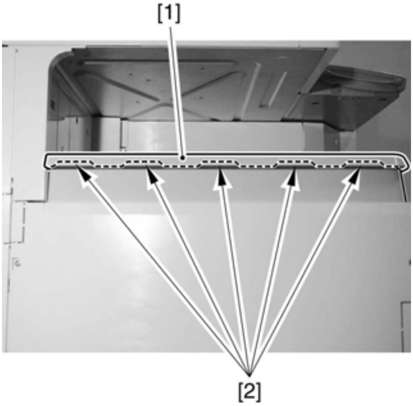
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-458

⚠Points to Note When Mounting the Delivery Tray

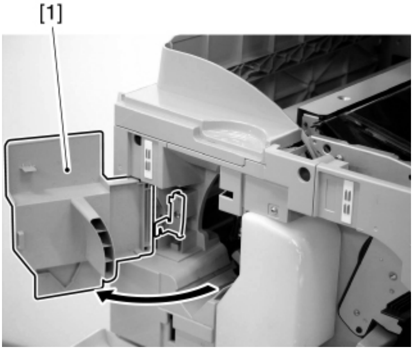
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-459

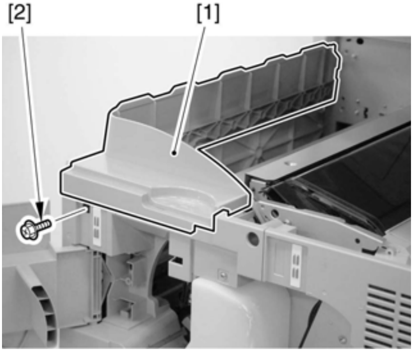
7.10.17.3 Removing the Delivery Tray Lower Cover

1) Open the toner cartridge access cover [1].



F-7-460

2) Remove the screw [2], and detach the delivery tray lower cover [1].



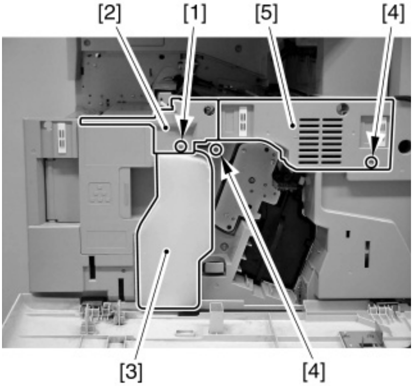
F-7-461

7.10.17.4 Removing ATR Sensor Unit

1) Turn the developing assembly rotary by hand so that the Bk toner cartridge is in position of replacement.

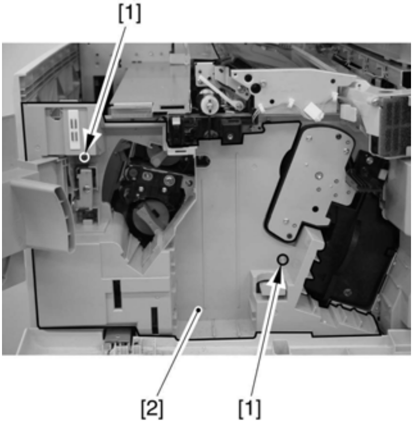
2) Remove the screw [1], and detach the

waste toner unit retainer [2] and the ITB waste toner unit [3]; then, remove the 2 screws [4], and detach the inside cover (middle) [5].



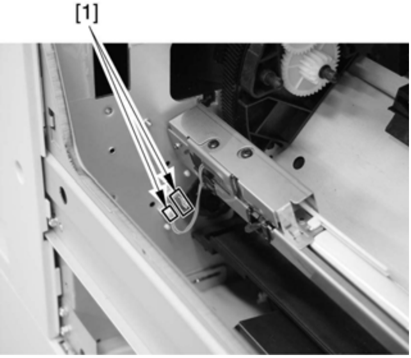
F-7-462

3) Remove the 2 screws [1], and detach the inside cover (left) [2].



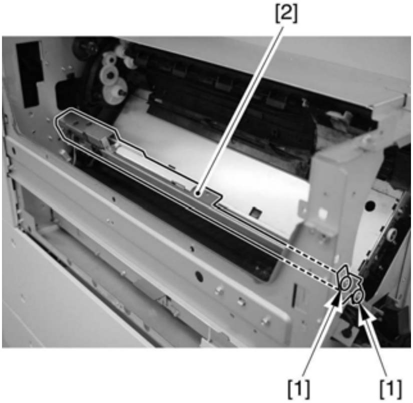
F-7-463

4) Disconnect the 2 connectors [1].



F-7-464

5) Remove the 2 screws [1], and detach the ATR sensor unit [2].

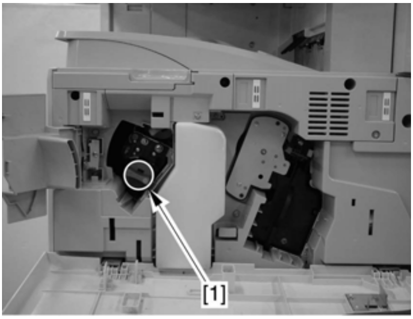


F-7-465

7.10.18 Environment Sensor PCB

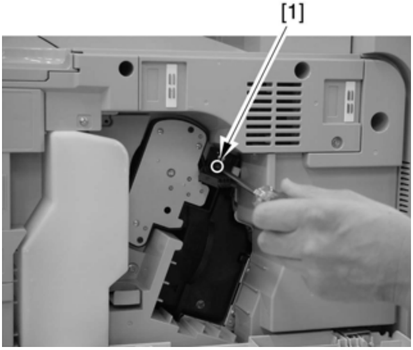
7.10.18.1 Removing the Drum Unit

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



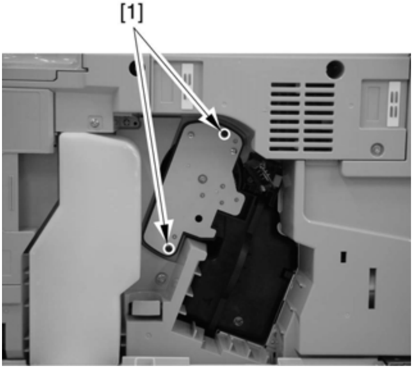
F-7-466

2) Remove the screw [1] (black; M3x20).



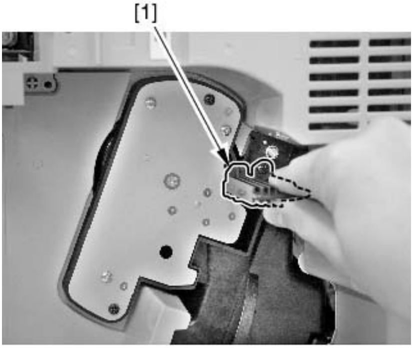
F-7-467

3) Remove the 2 fixing screws [1] (M4x20).

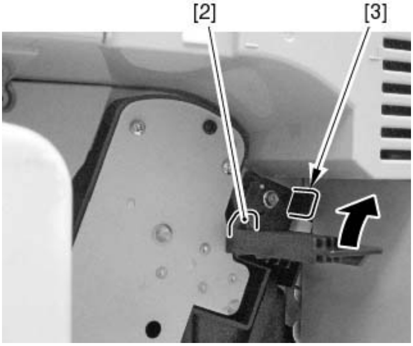


F-7-468

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

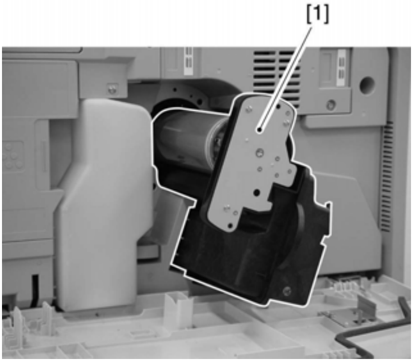


F-7-469



F-7-470

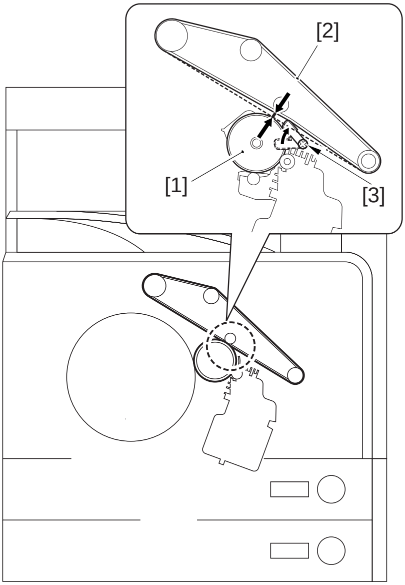
5) Slide out the drum unit [1] to the front to detach.



F-7-471

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



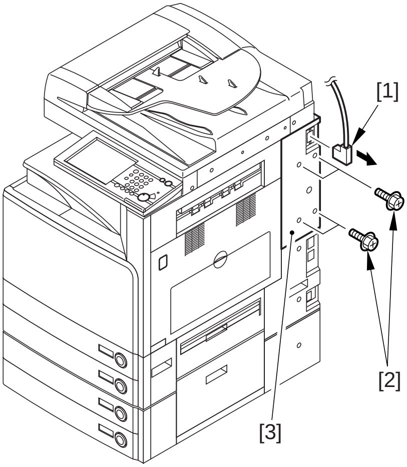
F-7-472

At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.18.2 Removing the Right Cover (upper rear)

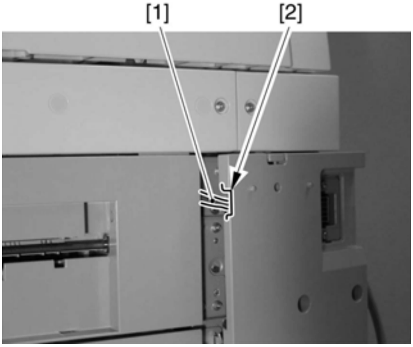
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-473

⚠**Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)**

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

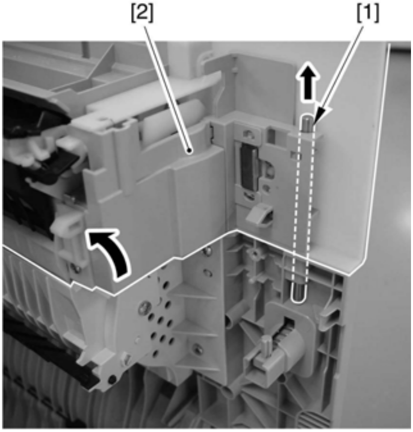


F-7-474

7.10.18.3 Removing the Right Door

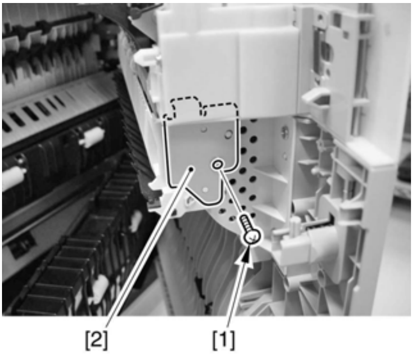
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-475

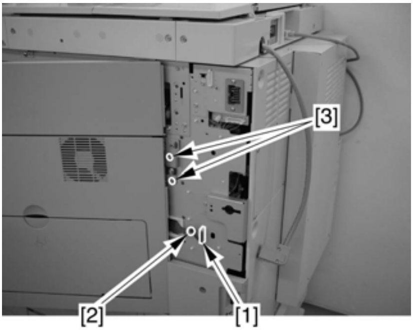
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-476

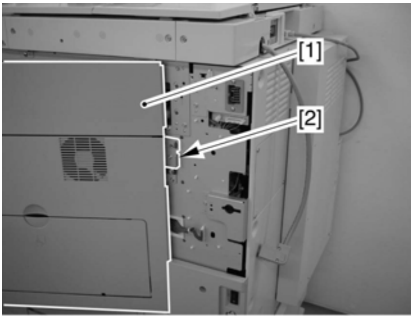
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-477

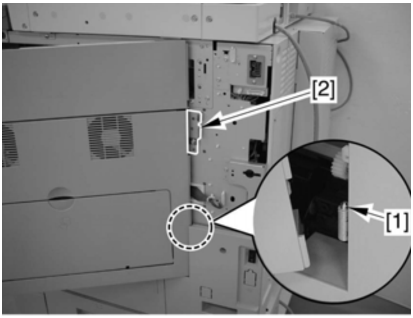
6) Detach the right door [1] together with the hinge [2].



F-7-478

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

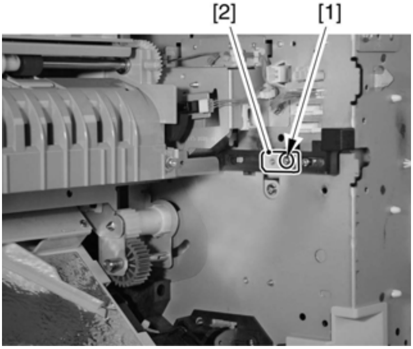


F-7-479

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

7.10.18.4 Removing the Fixing Assembly Release Arm Plate

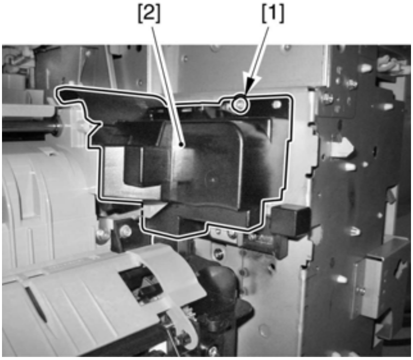
1) Remove the screw [1], and detach the plate [2].



F-7-480

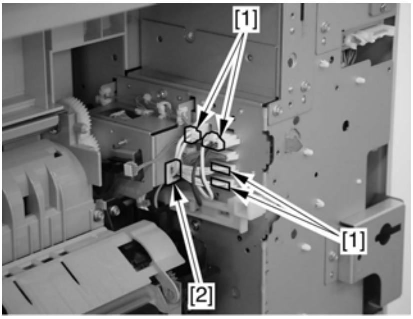
7.10.18.5 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



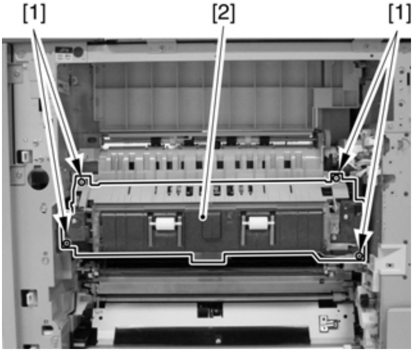
F-7-481

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-482

3) Remove the 4 screws [1], and detach the fixing assembly [2].



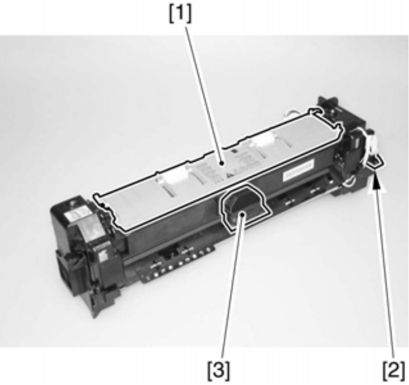
F-7-483

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



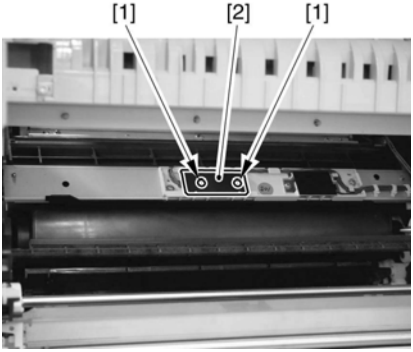
F-7-484

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

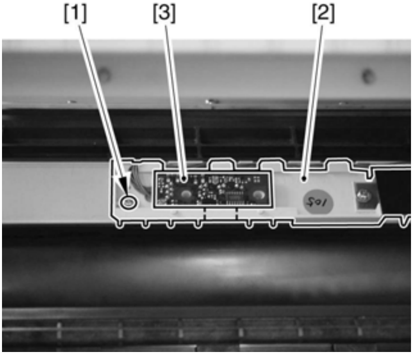
7.10.18.6 Removing the Patch Image Read Sensor

1) Using a stubby screwdriver, remove the 2 screws [1], and detach the sensor protective cover [2].



F-7-485

2) Remove the screw [1]; then, lifting the sensor PCB holder [2] slightly toward the front, pull out the patch image read sensor PCB [3] in upward direction at an angle.



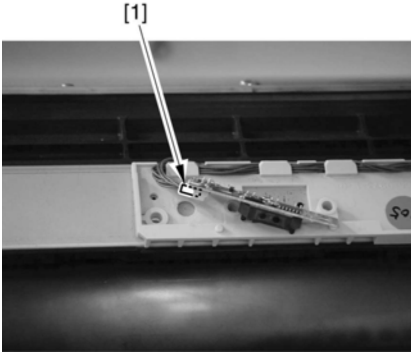
F-7-486

⚠

- Do not touch the volume element on the sensor PCB. If you touched it inadvertently, be sure to replace it.

- Do not touch the window surface of the sensor. If you touched it inadvertently, be sure to wipe it with a moist cloth. (Never dry wipe it.)

3) Disconnect the connector [1].

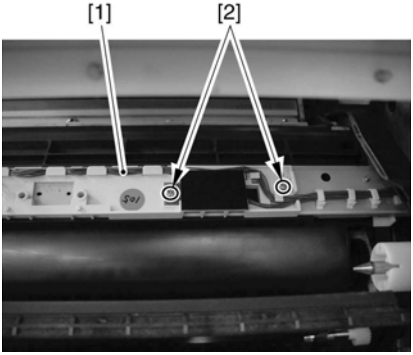


F-7-487

7.10.18.7 Removing the Environment Sensor PCB

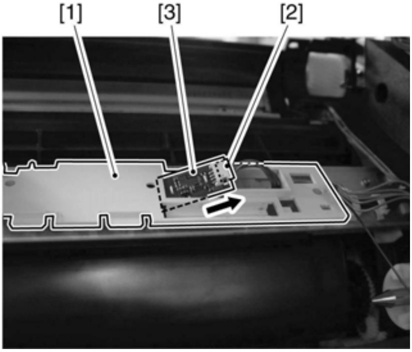
iR C3100

1) Free the cable [1] from the cable guide, and remove the 2 screws [2].



F-7-488

2) Turn over the sensor PCB holder [1], and disconnect the connector [2]; then, slide the environment sensor PCB [3] at an angle to detach.

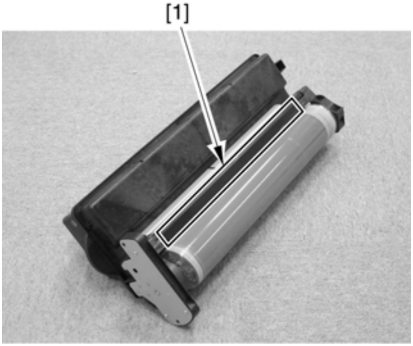


F-7-489

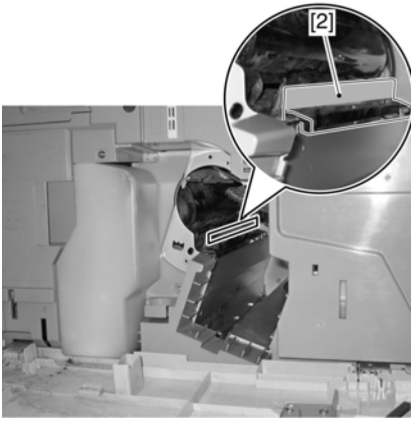
7.10.18.8 Points to Note When Mounting the Drum Unit

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-490



F-7-491

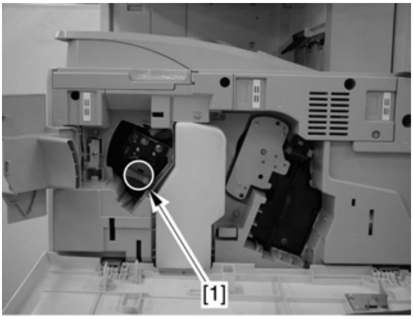
Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.19 Patch Image Sensor

7.10.19.1 Removing the Drum Unit

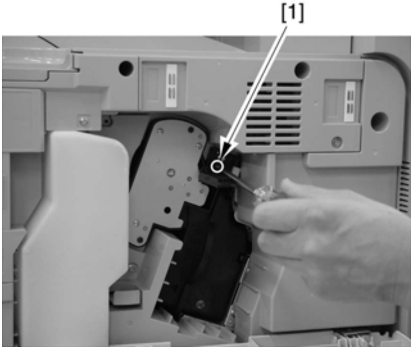
1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's

main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



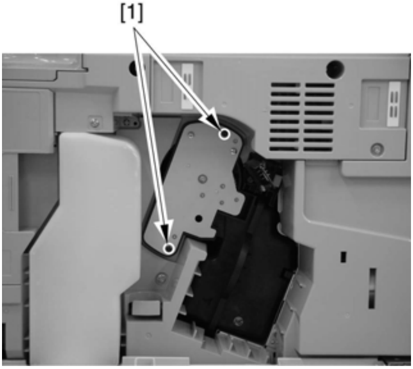
F-7-492

2) Remove the screw [1] (black; M3x20).



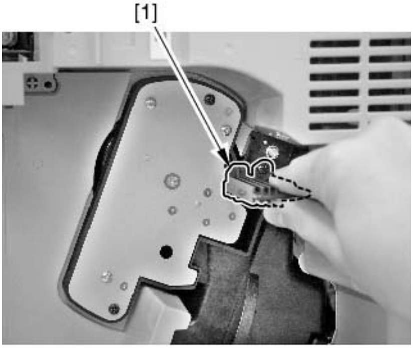
F-7-493

3) Remove the 2 fixing screws [1] (M4x20).

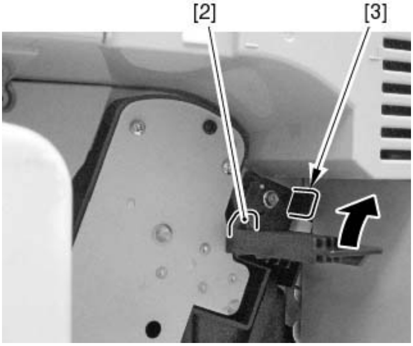


F-7-494

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

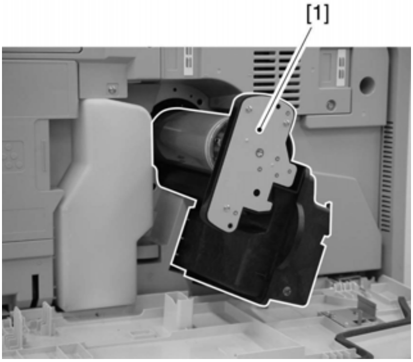


F-7-495



F-7-496

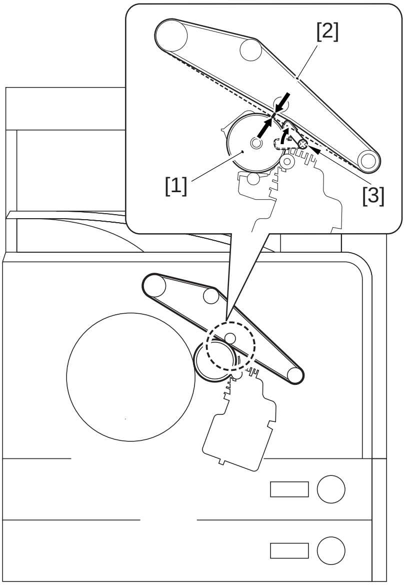
5) Slide out the drum unit [1] to the front to detach.



F-7-497

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



F-7-498

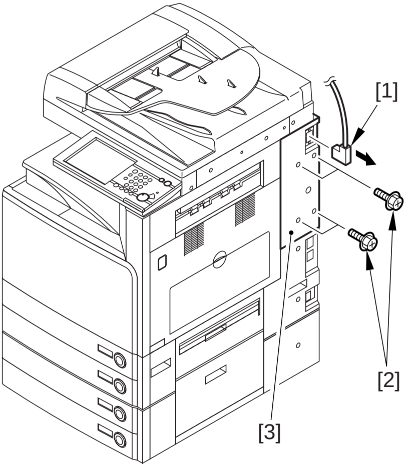
At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.19.2 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

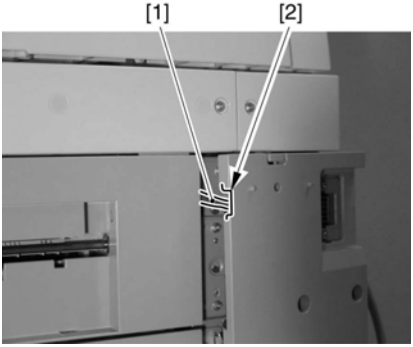
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-499

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

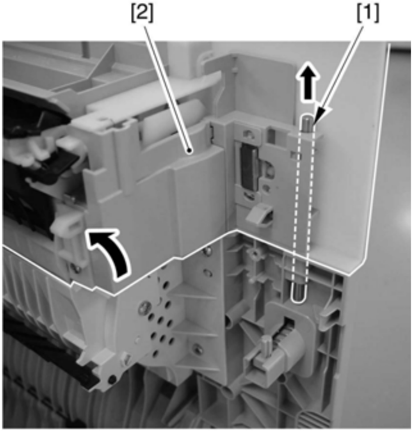


F-7-500

7.10.19.3 Removing the Right Door

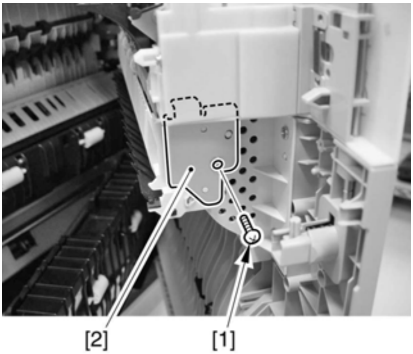
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-501

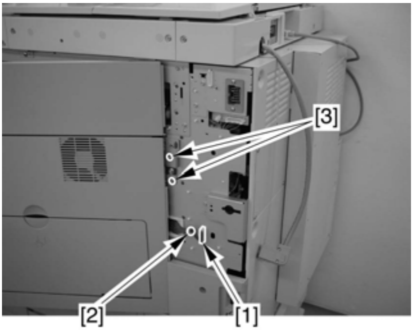
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-502

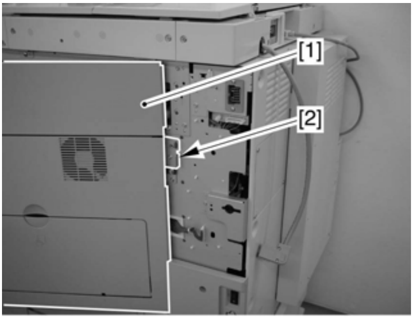
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-503

6) Detach the right door [1] together with the hinge [2].

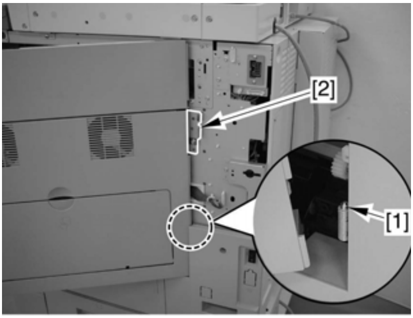


F-7-504

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

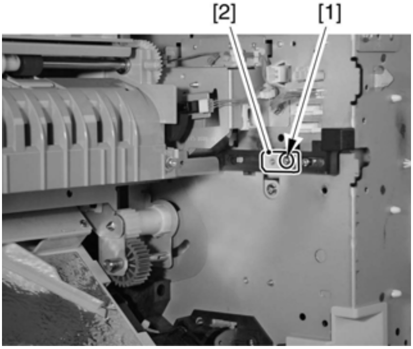


F-7-505

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

7.10.19.4 Removing the Fixing Assembly Release Arm Plate

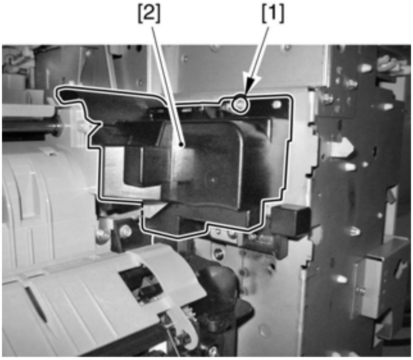
1) Remove the screw [1], and detach the plate [2].



F-7-506

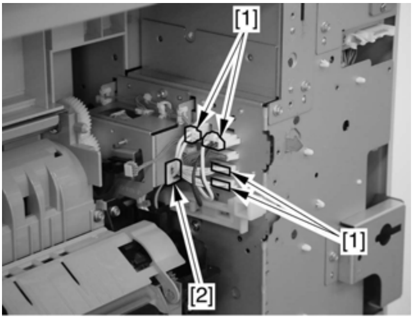
7.10.19.5 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



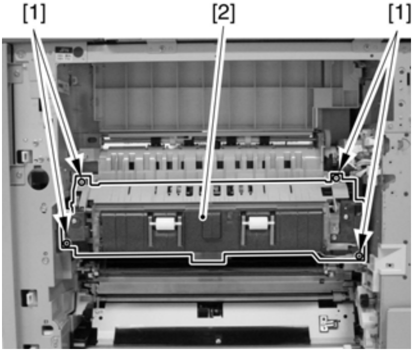
F-7-507

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-508

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-7-509

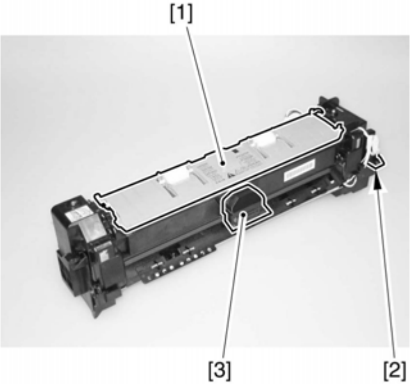
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠Placing the Fixing Assembly

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-7-510

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

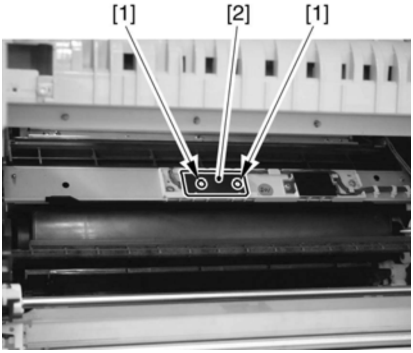
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

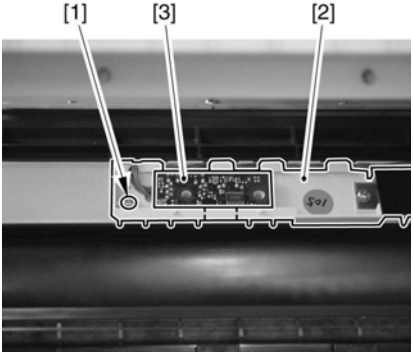
7.10.19.6 Removing the Patch Image Read Sensor

1) Using a stubby screwdriver, remove the 2 screws [1], and detach the sensor protective cover [2].



F-7-511

2) Remove the screw [1]; then, lifting the sensor PCB holder [2] slightly toward the front, pull out the patch image read sensor PCB [3] in upward direction at an angle.



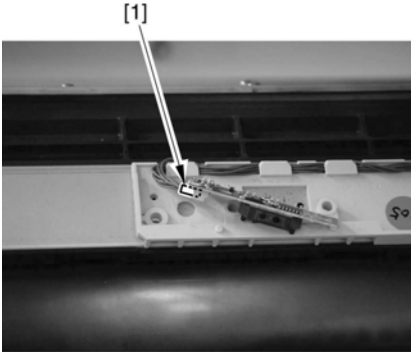
F-7-512

⚠

- Do not touch the volume element on the sensor PCB. If you touched it inadvertently, be sure to replace it.
- Do not touch the window surface of the sensor. If you touched it inadvertently, be sure to wipe it with a moist cloth. (Never dry wipe it.)

---

3) Disconnect the connector [1].

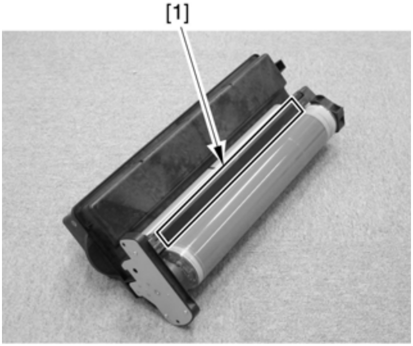


F-7-513

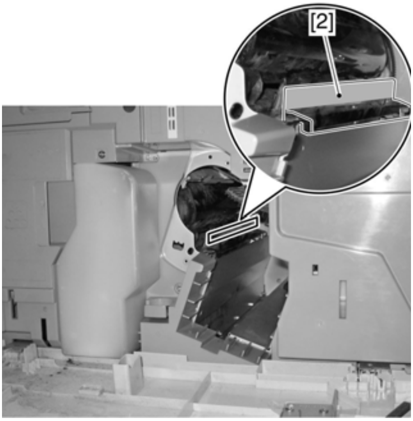
7.10.19.7 Points to Note When Mounting the Drum Unit

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-514



F-7-515

Memo:

The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

Chapter 8 Pickup / Feeding System

Contents

8.1 Construction 8-1
  8.1.1 Specifications, Control Mechanisms, and Functions 8-1
  8.1.2 Major Divisions of the Machine 8-2
  8.1.3 Arrangement of the Rollers...8-3
  8.1.4 Paper Paths (printer on its own)..8-5
  8.1.5 Paper Paths (w/ Inner 2-Way Tray-C1) 8-6
  8.1.6 Paper Paths (w/ Finisher-P1)...8-7
  8.1.7 Paper Paths (w/ Finisher-Q1/Saddle Finisher-Q2)..............................8-9
  8.1.8 Arrangement of Sensors 8-10
  8.1.9 Arrangement of Clutches and Solenoids...8-11
  8.1.10 Drive Transmission Routes 8-12
8.2 Basic Sequence...8-14
  8.2.1 Basic Sequence of Operations at Power-On 8-14
  8.2.2 Basic Sequence of Operation in Response to a Press on the Start Key 8-14
  8.2.3 Increase in Speed..8-15
8.3 Detecting Jams 8-19
  8.3.1 Delivery Jams..8-19
    8.3.1.1 Delay Jam Outside the Cassette Pickup Assembly 8-19
    8.3.1.2 Delay Jam in the Cassette Pickup Assembly 8-20
  8.3.2 Stationary Jams 8-20
    8.3.2.1 Common Stationary Jam 8-20
    8.3.2.2 Stationary Jam at Power-On...8-21
  8.3.3 Other Jams...8-22
    8.3.3.1 Wrong Size Jam 8-22
    8.3.3.2 Wrong Material Jam...8-22
    8.3.3.3 Cover Open Jam...8-23
8.4 Cassette 8-24
  8.4.1 Overview...8-24
  8.4.2 Identifying the Paper Size 8-25
  8.4.3 Setting Up the Universal Cassette...8-28
  8.4.4 Paper Level Sensor..8-29

8.5 Cassette Pick-Up Unit 8-34
  8.5.1 Overview 8-34
  8.5.2 Basic Sequence of Operations 8-35
8.6 Manual Feed Pickup Unit 8-36
  8.6.1 Overview 8-36
  8.6.2 Basic Sequence of Operations 8-37
  8.6.3 Identifying the Paper Size 8-37
  8.6.4 Paper Retaining Mechanism 8-38
8.7 Registration Unit 8-41
  8.7.1 Overview 8-41
  8.7.2 Controlling the Horizontal Registration 8-41
8.8 Duplex Feeding Unit 8-43
  8.8.1 Overview 8-43
  8.8.2 Sequence of Image Formation 8-45
  8.8.3 Flow of Paper (wo/ Delivery Option) 8-46
  8.8.4 Flow of Paper (w/ Delivery option -internal delivery) 8-53
  8.8.5 Flow of Paper (w/ Delivery option -external delivery) 8-60
8.9 Parts Replacement Procedure 8-66
  8.9.1 Pickup Unit 1 8-66
    8.9.1.1 Removing the Right Cover (upper rear) 8-66
    8.9.1.2 Removing the Right Door 8-66
    8.9.1.3 Removing the Right Cover (lower rear) 8-68
    8.9.1.4 Removing the Right Cover (lower front) 8-68
    8.9.1.5 Removing the Pickup Assembly 1 8-69
  8.9.2 Pickup Unit 2 8-69
    8.9.2.1 Removing the Right Cover (lower rear) 8-69
    8.9.2.2 Removing the Right Cover (lower front) 8-70
    8.9.2.3 Removing the Pickup Assembly 2 8-70
  8.9.3 Sensor Mounting Plate 8-71
    8.9.3.1 Removing the Right Cover (upper rear) 8-71
    8.9.3.2 Removing the Right Door 8-71
    8.9.3.3 Removing the Right Cover (lower rear) 8-73
    8.9.3.4 Removing the Right Cover (lower front) 8-73
    8.9.3.5 Removing the Pickup Assembly 1 8-74
    8.9.3.6 Removing the Pickup Assembly 2 8-74
    8.9.3.7 Removing the Sensor Base 8-75

8.9.3.8 Mounting the Sensor Base 8-75
8.9.4 Pickup Roller..8-76
8.9.4.1 Removing the Pickup Roller/Feed Roller/Separation Roller 8-76
8.9.5 Feed Roller 8-77
8.9.5.1 Removing the Pickup Roller/Feed Roller/Separation Roller 8-77
8.9.6 Separation Roller..8-78
8.9.6.1 Removing the Pickup Roller/Feed Roller/Separation Roller 8-78
8.9.7 Cassette Pickup Motor 1 8-79
8.9.7.1 Removing the Rear Cover...8-79
8.9.7.2 Removing the Cassette Pickup Motor 1 8-79
8.9.8 Cassette Pickup Motor 2 8-80
8.9.8.1 Removing the Rear Cover...8-80
8.9.8.2 Removing the Leakage Breaker 8-80
8.9.8.3 Removing the Cassette Pickup Motor 2....................................8-81
8.9.9 Cassette Size Detection Sensor 8-82
8.9.9.1 Removing the Right Cover (upper rear)....................................8-82
8.9.9.2 Removing the Right Door 8-83
8.9.9.3 Removing the Right Cover (lower rear)....................................8-84
8.9.9.4 Removing the Right Cover (lower front) 8-85
8.9.9.5 Removing the Pickup Assembly 2 8-85
8.9.9.6 Removing the Pickup Assembly 1 8-86
8.9.9.7 Removing the Cassette Size Sensor 8-86
8.9.10 Cassette Retry Paper Sensor..8-87
8.9.10.1 Removing the Right Cover (upper rear)..................................8-87
8.9.10.2 Removing the Right Door 8-88
8.9.10.3 Removing the Right Cover (lower rear)..................................8-90
8.9.10.4 Removing the Right Cover (lower front) 8-90
8.9.10.5 Removing the Pickup Assembly 1 8-91
8.9.10.6 Removing the Pickup Assembly 2 8-91
8.9.10.7 Removing the Sensor Base..8-92
8.9.10.8 Removing the Cassette Retry Paper Sensor 8-92
8.9.11 Cassette Paper Sensor 8-93
8.9.11.1 Removing the Right Cover (upper rear)..................................8-93
8.9.11.2 Removing the Right Door 8-94
8.9.11.3 Removing the Right Cover (lower rear)..................................8-95
8.9.11.4 Removing the Right Cover (lower front) 8-96

8.9.11.5 Removing the Pickup Assembly 1 8-96
8.9.11.6 Removing the Pickup Assembly 2 8-97
8.9.11.7 Removing the Sensor Base 8-97
8.9.11.8 Removing the Cassette Paper Sensor...................................... 8-98
8.9.12 Cassette Paper Level Sensor (A/B) 8-98
8.9.12.1 Removing the Right Cover (upper rear) 8-98
8.9.12.2 Removing the Right Door 8-99
8.9.12.3 Removing the Right Cover (lower rear) 8-101
8.9.12.4 Removing the Right Cover (lower front).............................. 8-101
8.9.12.5 Removing the Pickup Assembly 1 8-102
8.9.12.6 Removing the Pickup Assembly 2 8-102
8.9.12.7 Removing the Sensor Base 8-103
8.9.12.8 Removing the Cassette Paper Level Sensor (A/B) 8-103
8.9.13 Slide Resistor 8-104
8.9.13.1 Removing the Right Cover (upper rear) 8-104
8.9.13.2 Removing the Right Door 8-105
8.9.13.3 Removing the Manual Feed Unit 8-106
8.9.13.4 Removing Manual Feed Tray Unit 8-107
8.9.13.5 Removing the Slide Resistor.. 8-108
8.9.14 Cassette Pickup Solenoid.. 8-108
8.9.14.1 Removing the Right Cover (upper rear) 8-108
8.9.14.2 Removing the Right Door 8-109
8.9.14.3 Removing the Right Cover (lower rear) 8-111
8.9.14.4 Removing the Right Cover (lower front).............................. 8-111
8.9.14.5 Removing the Pickup Assembly 1 8-112
8.9.14.6 Removing the Pickup Assembly 2 8-112
8.9.14.7 Removing the Cassette Pickup Solenoid 8-113
8.9.15 Cassette Size Sensor Relay PCB... 8-113
8.9.15.1 Removing the Right Cover (upper rear) 8-113
8.9.15.2 Removing the Right Door 8-114
8.9.15.3 Removing the Right Cover (lower rear) 8-115
8.9.15.4 Removing the Right Cover (lower front).............................. 8-116
8.9.15.5 Removing the Pickup Assembly 1 8-116
8.9.15.6 Removing the Pickup Assembly 2 8-117
8.9.15.7 Removing the Cassette Size Sensor Relay PCB 8-117
8.9.16 Manual Feed Pickup Clutch... 8-118

8.9.16.1 Removing the Right Cover (upper rear)................................8-118
8.9.16.2 Removing the Right Door..8-118
8.9.16.3 Removing the Rear Cover..8-120
8.9.16.4 Removing the Main Power Switch 8-120
8.9.16.5 Removing the Manual Feed Pickup Clutch 8-121
8.9.17 Manual Feed Tray Unit...8-122
8.9.17.1 Removing the Right Cover (upper rear)................................8-122
8.9.17.2 Removing the Right Door..8-123
8.9.17.3 Removing the Manual Feed Unit..8-124
8.9.17.4 Removing Manual Feed Tray Unit 8-125
8.9.18 Manual Feed Unit...8-126
8.9.18.1 Removing the Right Cover (upper rear)................................8-126
8.9.18.2 Removing the Right Door..8-127
8.9.18.3 Removing the Manual Feed Unit..8-128
8.9.19 Manual Pickup Roller 8-129
8.9.19.1 Removing the Right Cover (upper rear)................................8-129
8.9.19.2 Removing the Right Door..8-130
8.9.19.3 Removing the Manual Feed Unit..8-132
8.9.19.4 Removing the Pickup Roller...8-133
8.9.20 Manual Feed Separation Pad...8-134
8.9.20.1 Removing the Right Cover (upper rear)................................8-134
8.9.20.2 Removing the Right Door..8-134
8.9.20.3 Removing the Manual Feed Unit..8-136
8.9.20.4 Removing the Pickup Roller...8-137
8.9.20.5 Removing the Manual Feed Separation Pad 8-138
8.9.21 Transparency Sensor (Front/Rear) 8-138
8.9.21.1 Removing the Right Cover (upper rear)................................8-138
8.9.21.2 Removing the Right Door..8-139
8.9.21.3 Removing the Right Cover (lower rear)................................8-140
8.9.21.4 Removing the Right Cover (lower front) 8-141
8.9.21.5 Removing the PIck-up Assembly 1.......................................8-141
8.9.21.6 Removing the Transparency Sensor......................................8-142
8.9.22 Registration Sensor 8-142
8.9.22.1 Removing the Right Cover (upper rear)................................8-142
8.9.22.2 Removing the Right Door..8-143
8.9.22.3 Removing the Rear Cover..8-145

8.9.22.4 Removing the Main Power Switch 8-145
8.9.22.5 Removing the Manual Feed Pickup Clutch 8-146
8.9.22.6 Removing the Contact Guide and the Pre-Registration Guide Fixing Boss 8-147
8.9.22.7 Removing the Inside Front Cover (right)............................... 8-147
8.9.22.8 Removing the Registration Sensor.. 8-148
8.9.23 Registration Clutch 8-149
8.9.23.1 Removing the Rear Cover.. 8-149
8.9.23.2 Removing the Registration Clutch.. 8-149
8.9.24 Vertical Path Roller.. 8-150
8.9.24.1 Removing the Right Cover (upper rear) 8-150
8.9.24.2 Removing the Right Door.. 8-151
8.9.24.3 Removing the Right Cover (lower rear) 8-152
8.9.24.4 Removing the Right Cover (lower front)............................... 8-153
8.9.24.5 Removing the Pickup Assembly 1 8-153
8.9.24.6 Removing the Pickup Assembly 2 8-154
8.9.24.7 Removing the Sensor Base 8-154
8.9.24.8 Removing the Vertical Path Roller 8-155
8.9.25 Duplex Feed Roller 2 8-156
8.9.25.1 Removing the Right Cover (upper rear) 8-156
8.9.25.2 Removing the Right Door.. 8-156
8.9.25.3 Removing the Duplex Feed Sensor.. 8-158
8.9.25.4 Removing the Duplex Feed Roller 2 8-158
8.9.26 Duplex Feed Sensor 8-159
8.9.26.1 Removing the Right Cover (upper rear) 8-159
8.9.26.2 Removing the Right Door.. 8-160
8.9.26.3 Removing the Duplex Feed Sensor.. 8-161
8.9.27 Duplex Feed Clutch 8-162
8.9.27.1 Removing the Right Cover (upper rear) 8-162
8.9.27.2 Removing the Right Door.. 8-163
8.9.27.3 Removing the Rear Cover.. 8-164
8.9.27.4 Removing the Duplex Feed Clutch.. 8-165
8.9.28 Delivery Assembly 1.. 8-166
8.9.28.1 Removing the Delivery Tray 8-166
8.9.28.2 Removing the Support Cover.. 8-166
8.9.28.3 Removing the Delivery Tray Right Cover............................. 8-167

8.9.28.4 Removing the Right Cover (upper rear)................................8-167
8.9.28.5 Removing the Right Door 8-168
8.9.28.6 Removing the Delivery Assembly 1 8-169
8.9.29 Delivery Drive Unit..8-170
8.9.29.1 Removing the Delivery Tray..8-170
8.9.29.2 Removing the Support Cover...8-171
8.9.29.3 Removing the Delivery Tray Right Cover 8-171
8.9.29.4 Removing the Right Door 8-171
8.9.29.5 Removing the Delivery Assembly 1 8-173
8.9.29.6 Removing the Delivery Drive Assembly 8-173

8.1 Construction

8.1.1 Specifications, Control Mechanisms, and Functions

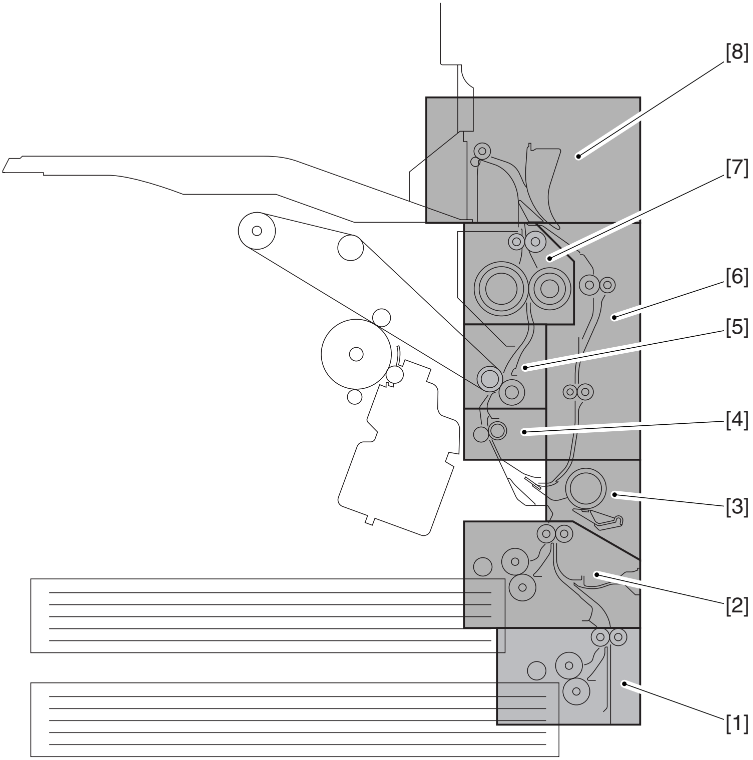
The major specifications, control mechanisms, and functions of the machine's pickup/feed system are as follows:

T-8-1

Item	Description	-
Accommodation of paper	front loading	-
Method of pickup	cassette	separation retard
	manual feed tray	separation pad
Reference of paper feed	center	
Size of paper stack	cassette 1/2	550 sheets (80 g/m2 paper)
	manual feed tray	50 sheets (80 g/m2 paper)
Size of paper	cassette 1	B4, A4, B5, LGL, LTR, EXE, A4 R, B5 R, LTR R, A5 R, STMT R, envelope
	cassette 2	A3, B4, A4, B5, LGL, LTR, EXE, A4 R, B5 R, LTR R, A5 R, STMT R, 12"x18"
	manual feed tray	A3, B4, A4, B5, LDR, LGLLTR, A4 R, B5 R, LTR R, A5 R, STMT R, EXE, 12"x18", SRA3, postcard, envelope, free size

Item	Description	-
Weight of paper	cassette 1/2	64 to 163 g/m2 (single-sided)
		64 to 105 g/m2 (auto duplex)
	manual feed tray	64 to 163 g/m2 (if double-sided, manual only; no auto duplex)
Paper size switch	cassette 1/2	by user
	manual size tray	by user
Duplex printing	through	
	Envelope Sizes Com10, Monarch, DL, ISO-C5, ISO-B5, YOGATA No. 4	
	Postcard Sizes A6 R, A5, A5 R, A4, A4 R	
	Special sizes:	12×18-> 305x457 mm
		SRA3-> 320x450 mm

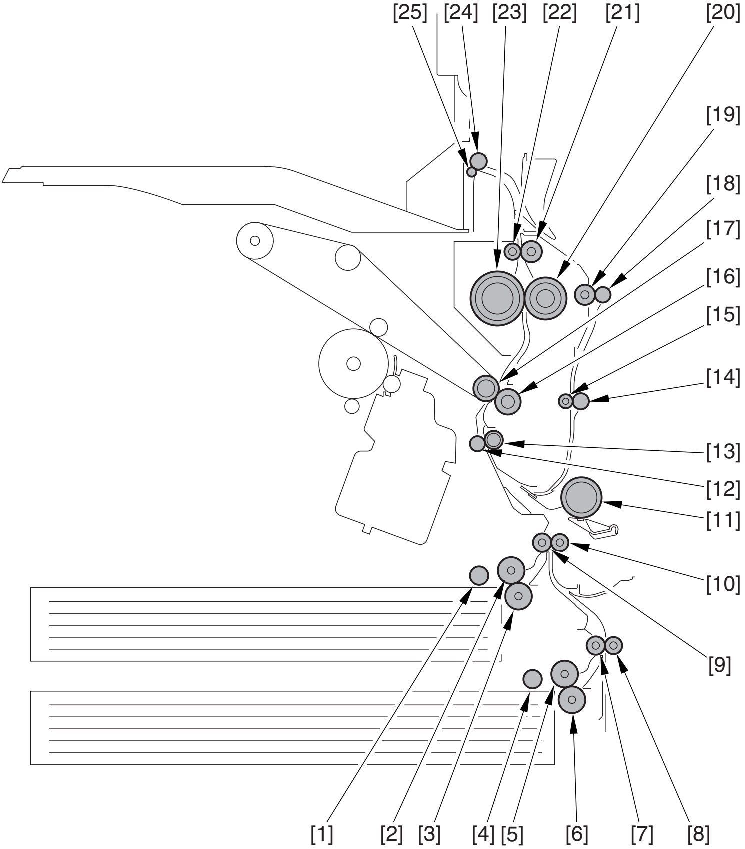
8.1.2 Major Divisions of the Machine



F-8-1

[1] Pickup assembly (cassette 2)
[2] Pickup assembly (cassette 1)
[3] Manual feed pickup assembly
[4] Registration roller assembly
[5] Secondary transfer assembly
[6] Duplex feeding assembly
[7] Fixing assembly
[8] Delivery assembly 1

8.1.3 Arrangement of the Rollers


[25]
[24]
[23]
[22]
[21]
[20]
[19]
[18]
[17]
[16]
[15]
[14]
[13]
[12]
[11]
[10]
[9]
[1]
[2]
[3]
[4]
[5]
[6]
[7]
[8]

F-8-2

[1] Pickup roller (cassette 1)

[2] Feed roller (cassette 1)

[3] Separation roller (cassette 1)

[4] Pickup roller (cassette 2)

[5] Feed roller (cassette 2)

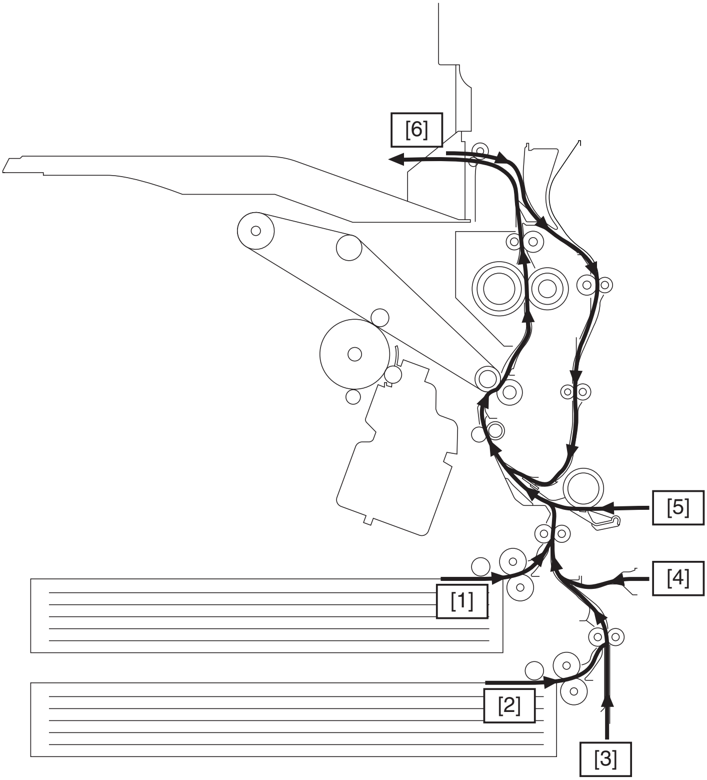
[6] Separation roller (cassette 2)

[7] Vertical path roller 2

[8] Vertical path slave roller 2

[9] Vertical path roller 1
[10] Vertical path slave roller 1
[11] Manual feed pickup roller
[12] Registration roller (inside)
[13] Registration roller (outside)
[14] Duplex feed roller 2
[15] Duplex feed roll 2
[16] Secondary transfer outside roller
[17] Secondary transfer inside roller
[18] Duplex feed roller 1
[19] Duplex feed roll 1
[20] Pressure roller
[21] Fixing outlet roller
[22] Fixing outlet roll
[23] Fixing roller
[24] Delivery roller
[25] Delivery roll

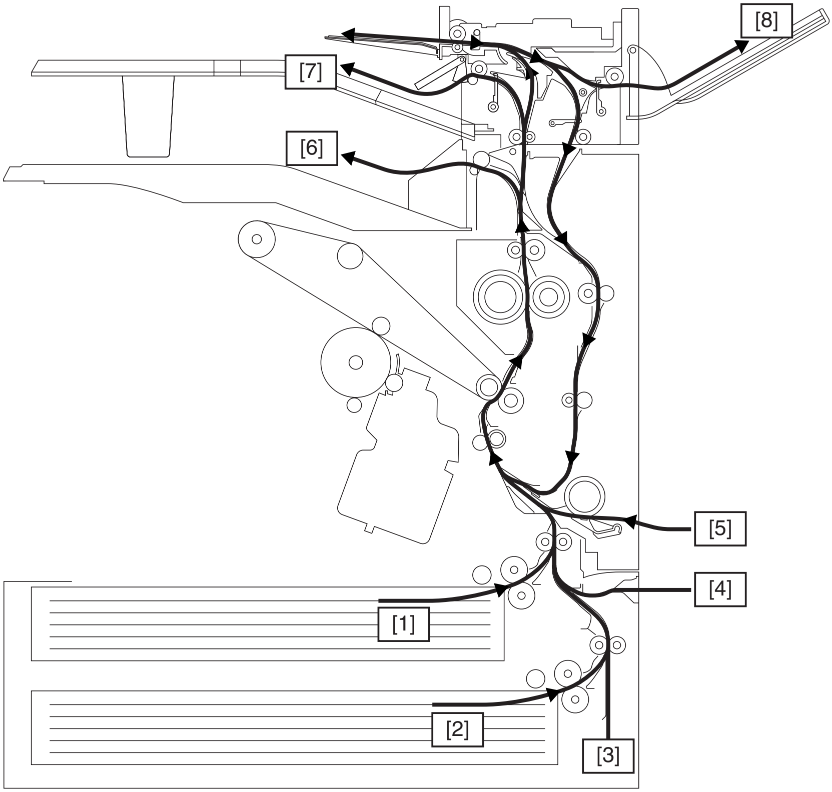
8.1.4 Paper Paths (printer on its own)



F-8-3

[1] pickup from cassette 1
[2] pickup from cassette 2
[3] pickup from cassette pedestal
[4] pickup from side paper deck
[5] pickup from manual feed tray
[6] delivery to copy tray 1

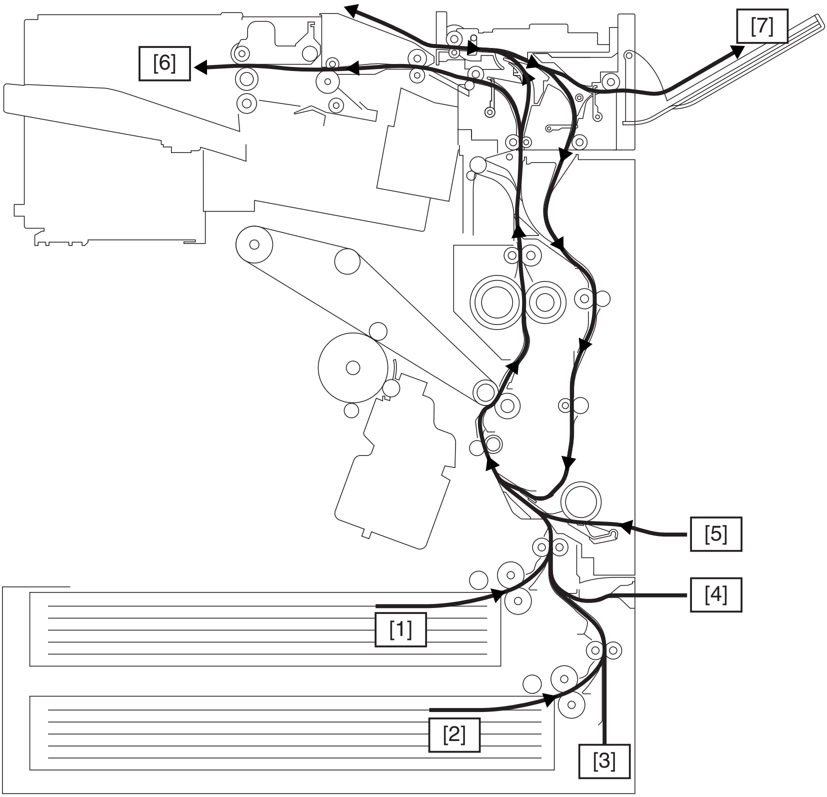
8.1.5 Paper Paths (w/ Inner 2-Way Tray-C1)



F-8-4

[1] pickup from cassette 1
[2] pickup from cassette 2
[3] pickup from cassette pedestal
[4] pickup from side paper deck
[5] pickup from manual feed tray
[6] delivery to copy tray 1
[7] delivery to copy tray 2
[8] delivery to copy tray 3

8.1.6 Paper Paths (w/ Finisher-P1)



F-8-5

[1] pickup from cassette 1

[2] pickup from cassette 2

[3] pickup from cassette pedestal

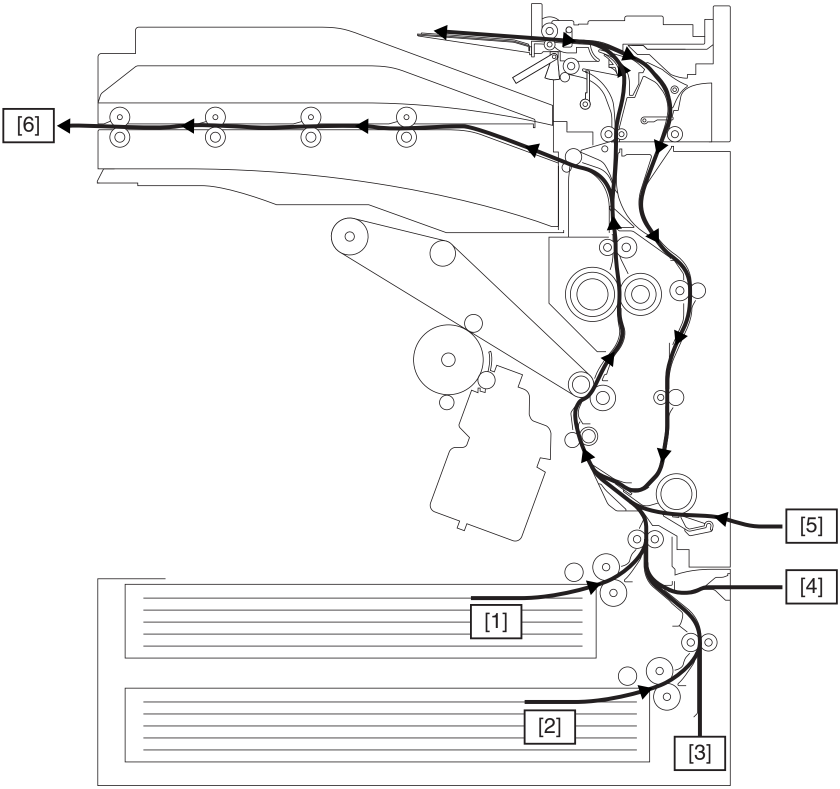
[4] pickup from paper deck

[5] pickup from manual feed

[6] delivery to Finisher-P1

[7] delivery to copy tray 3

8.1.7 Paper Paths (w/ Finisher-Q1/Saddle Finisher-Q2)



F-8-6

[1] pickup from cassette 1

[2] pickup from cassette 2

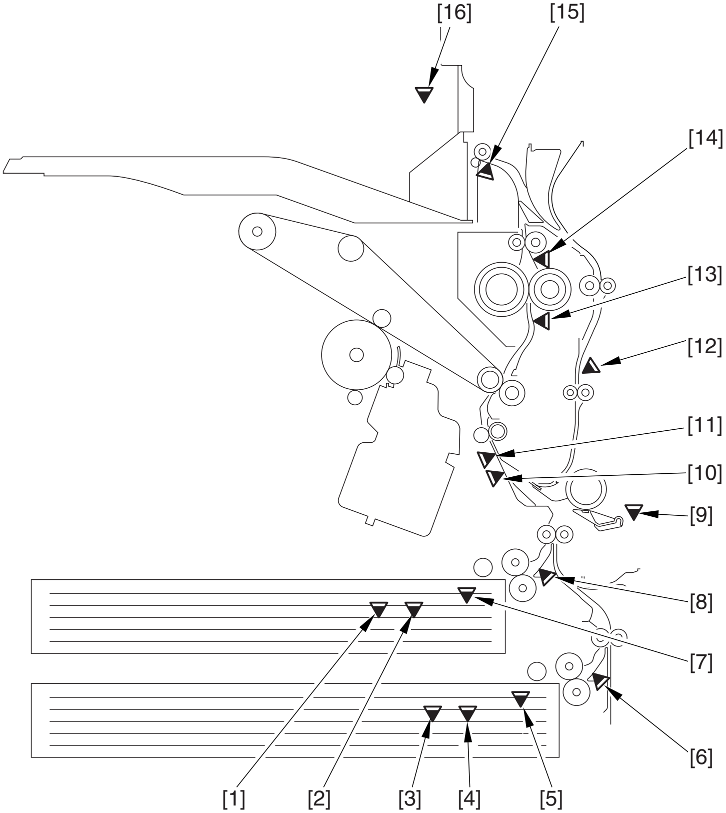
[3] pickup from cassette pedestal

[4] pickup from paper deck

[5] pickup from manual feed tray

[6] delivery to Finisher-Q1/Saddle Finisher-Q2

8.1.8 Arrangement of Sensors


[16]
[15]
[14]
[13]
[12]
[11]
[10]
[9]
[8]
[7]
[6]
[1]
[2]
[3]
[4]
[5]

F-8-7

[1] Cassette 1 paper level sensor B (PS4)

[2] Cassette 1 paper level sensor A (PS3)

[3] Cassette 2 paper level sensor B (PS6)

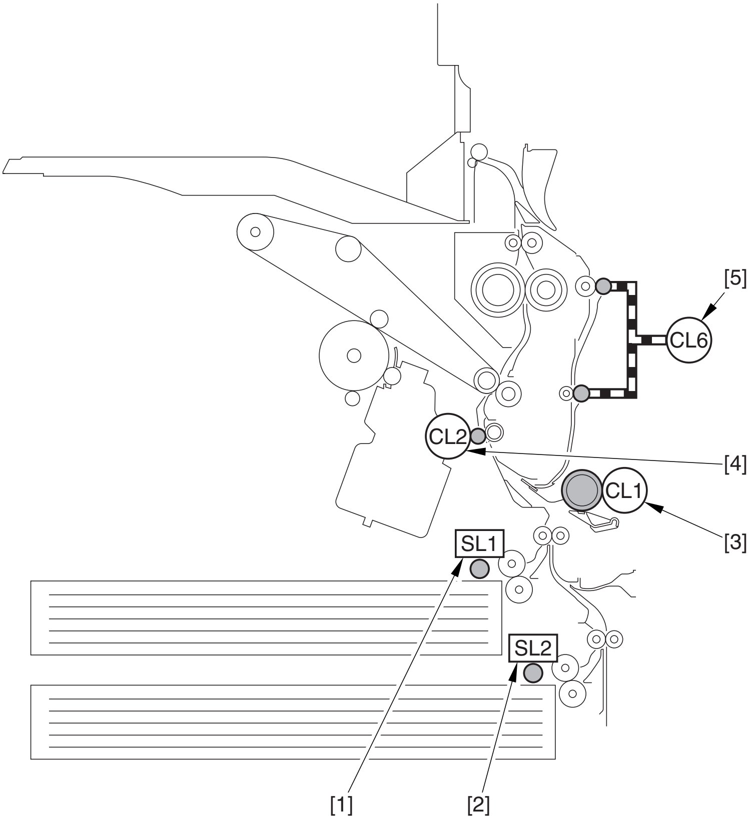
[4] Cassette 2 paper level sensor A (PS5)

[5] Cassette 2 paper sensor (PS2)

[6] Cassette 2 retry sensor (PS11)

[7] Cassette 1 paper sensor (PS1)
[8] Cassette 1 retry sensor (PS10)
[9] Manual feed tray paper sensor (PS7)
[10] Transparency sensor (PS26)
[11] Registration sensor (PS9)
[12] Duplex feed sensor (PS17)
[13] Fixing inlet sensor (PS25)
[14] Fixing outlet sensor (PS13)
[15] Delivery sensor 1 (PS14)
[16] Delivery full sensor 1 (PS15)

8.1.9 Arrangement of Clutches and Solenoids


[5]
CL6
CL2
[4]
CL1
[3]
SL1
SL2
[1]
[2]

F-8-8

[1] Cassette 1 pickup solenoid (SL1)

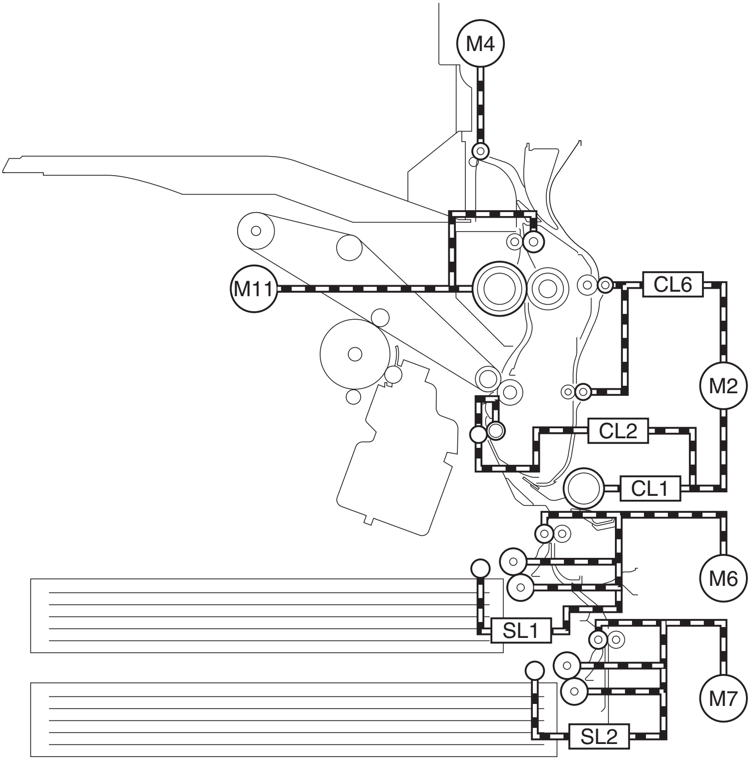
[2] Cassette 2 pickup solenoid (SL2)

[3] Manual feed tray pickup clutch (CL1)

[4] Registration clutch (CL2)

[5] Duplex feed clutch (CL6)

8.1.10 Drive Transmission Routes

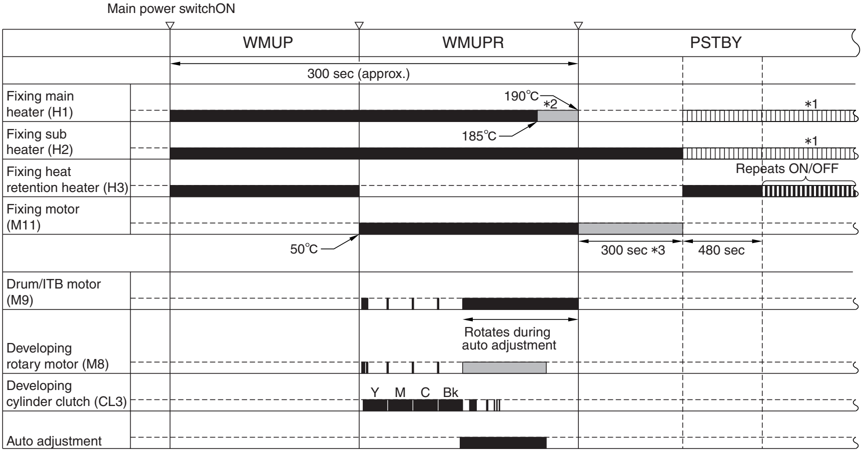

M4
M11
CL6
M2
CL2
CL1
M6
SL1
SL2
M7

F-8-9

M2 main motor
M4 No. 1 delivery motor
M6 cassette 1 pickup motor
M7 cassette 2 pickup motor
M11 fixing motor
SL1 cassette 1 pickup solenoid
SL2 cassette 2 pickup solenoid
CL1 manual feed pickup clutch
CL2 registration clutch
CL6 duplex feed clutch

8.2 Basic Sequence

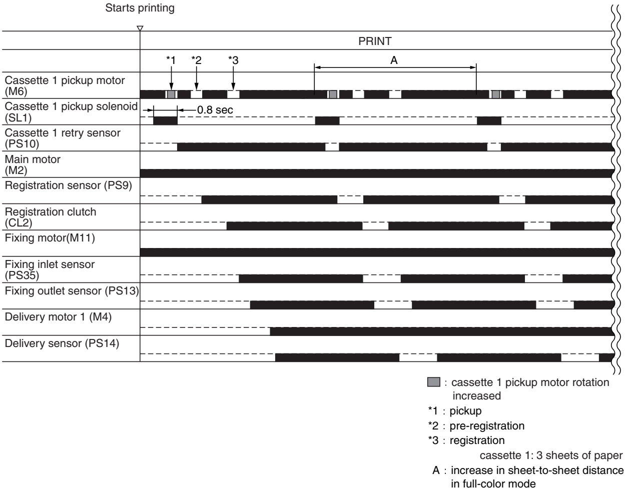
8.2.1 Basic Sequence of Operations at Power-On


Main power switchON
WMUP
WMUPR
PSTBY
300 sec (approx.)
Fixing main heater (H1)
190℃
*2
*1
Fixing sub heater (H2)
185℃
*1
Fixing heat retention heater (H3)
Repeats ON/OFF
Fixing motor (M11)
50℃
300 sec *3
480 sec
Drum/ITB motor (M9)
Rotates during auto adjustment
Developing rotary motor (M8)
Developing cylinder clutch (CL3)
Y M C Bk
Auto adjustment

F-8-10

8.2.2 Basic Sequence of Operation in Response to a Press on the Start Key

- Basic Sequence of Operations for Making 3 Prints

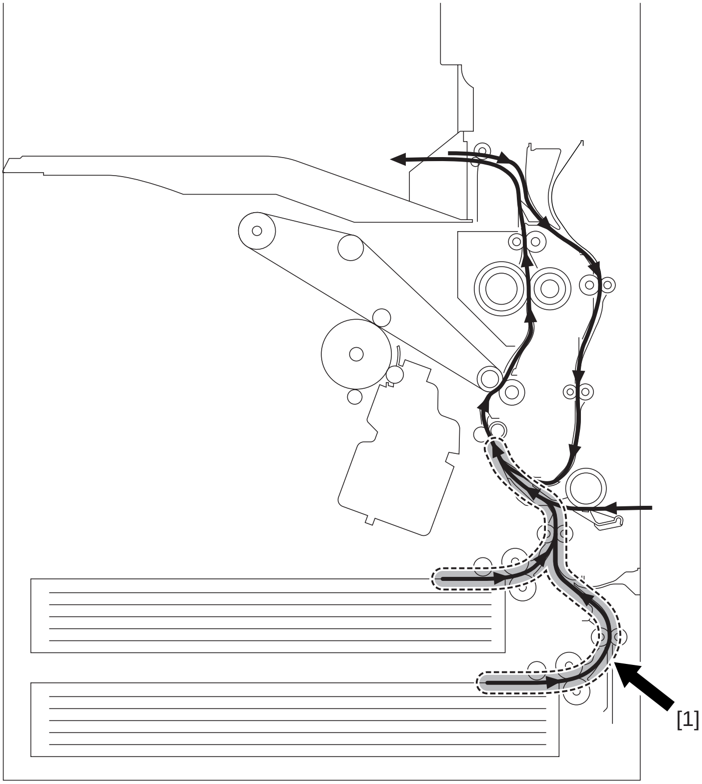

Starts printing
PRINT
*1
*2
*3
A
Cassette 1 pickup motor (M6)
Cassette 1 pickup solenoid (SL1)
0.8 sec
Cassette 1 retry sensor (PS10)
Main motor (M2)
Registration sensor (PS9)
Registration clutch (CL2)
Fixing motor(M11)
Fixing inlet sensor (PS35)
Fixing outlet sensor (PS13)
Delivery motor 1 (M4)
Delivery sensor (PS14)
▨ : cassette 1 pickup motor rotation increased
*1 : pickup
*2 : pre-registration
*3 : registration
cassette 1: 3 sheets of paper
A : increase in sheet-to-sheet distance in full-color mode

F-8-11

8.2.3 Increase in Speed

The machine increases the speed of moving paper over specific intervals. An overview and the associated accessories for the increase in speed are as follows:

- No Delivery Accessory

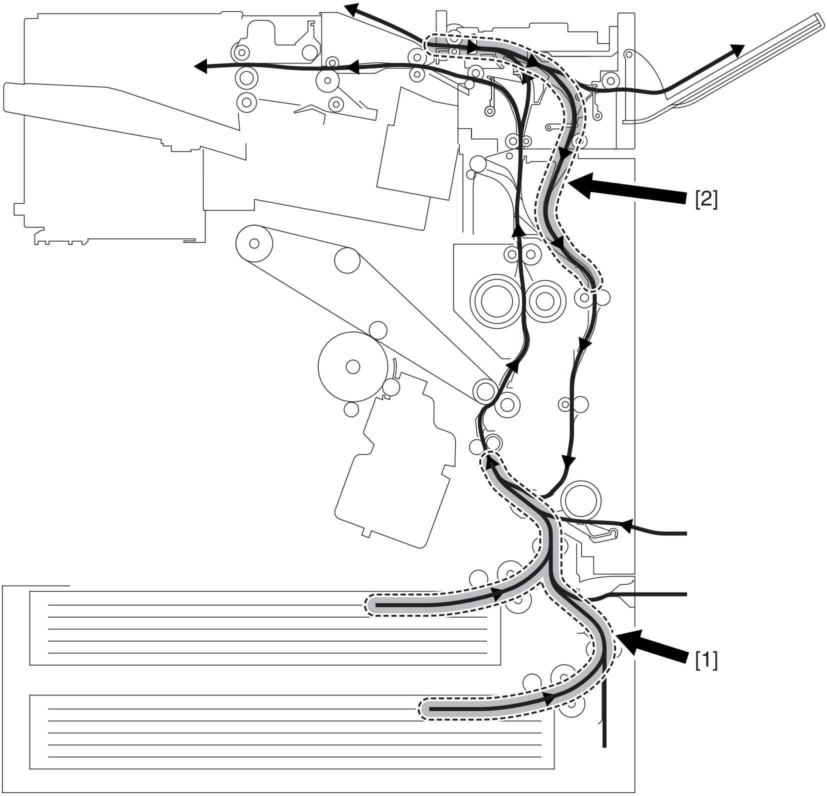


F-8-12

1. Increase in Speed for Pickup Operation

The speed is 1.5 times as high as the process speed (no increase if for manual feed pickup)

- Finisher-P1 in Use



F-8-13

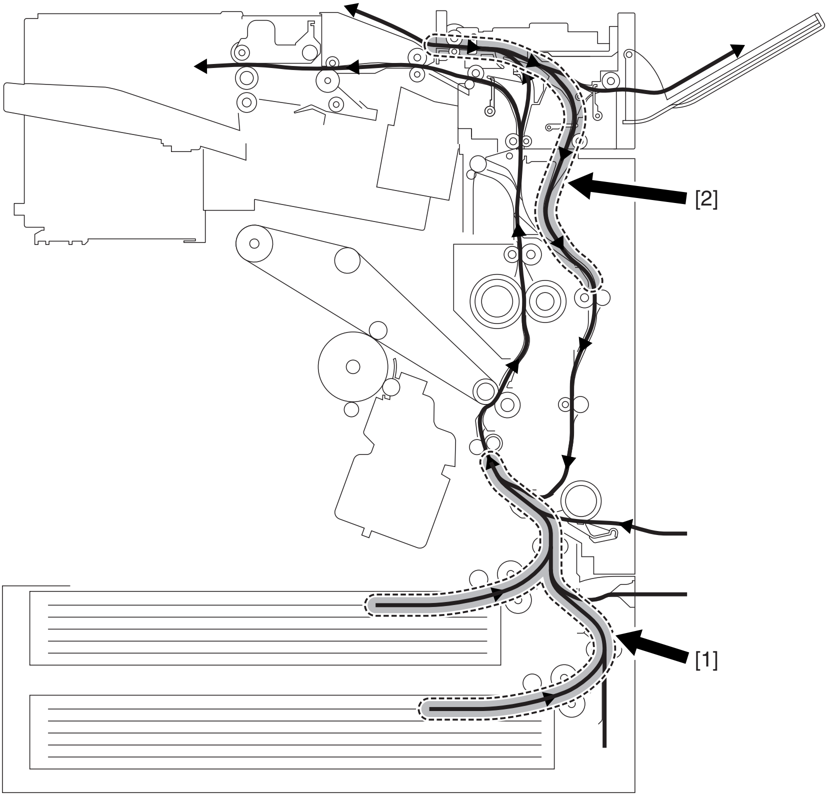
1. Increase in Speed for Pickup

The speed is 1.5 times as high as the process speed (no increase if for manual feed pickup).

2. Increase in Speed for Reversal

The speed is 2 times as high as the process speed (no increase if for delivery to tray 3).

- Finisher-Q1/Q2 in Use



F-8-14

1. Increase in Speed for Pickup

The speed is 1.5 times as high as the process speed (no increase if for manual feed pickup).

2. Increase in Speed After Fixing

The speed is 2 times as high as the process speed.

3. Increase in Speed for the Buffer Path

The speed is 2.5 times as high as the process speed (increase if for large size; no increase if for delivery to saddle).

4. Increase in Speed for Reversal

The speed is 2 times as high as the process speed (no increase if for delivery to tray 3).

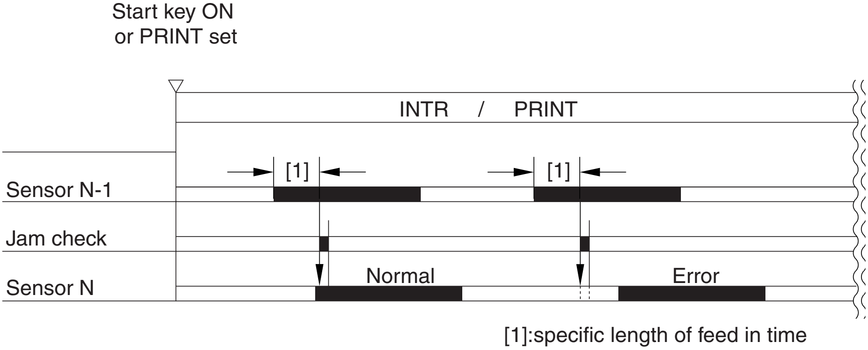
8.3 Detecting Jams

8.3.1 Delivery Jams

8.3.1.1 Delay Jam Outside the Cassette Pickup Assembly

A delay jam outside the cassette pickup assembly is identified as follows:

The length of time it takes for paper to move from sensor N-1 to the delay jam sensor N is kept under control; a delay jam is identified if the delay jam sensor does not go on within a specific length of time after the sensor N has gone on.


Start key ON
or PRINT set
INTR / PRINT
[1]
[1]
Sensor N-1
Jam check
Sensor N
Normal
Error
[1]:specific length of feed in time

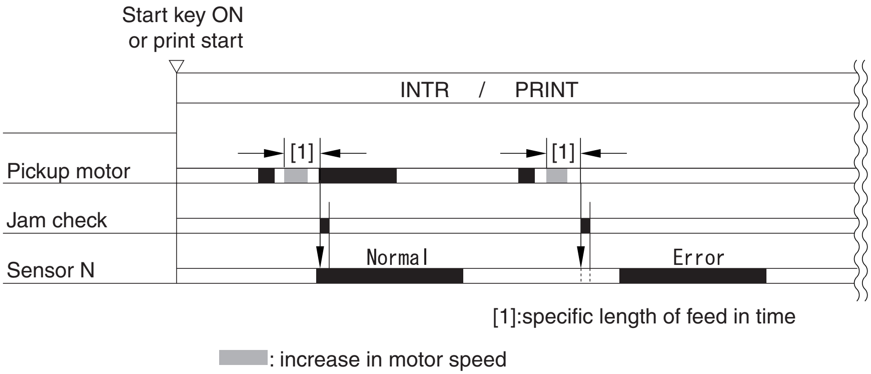
F-8-15

T-8-2

Sensor
Registration sensor (PS9)
Fixing delivery sensor (PS13)
No. 1 delivery sensor (PS14)
Duplex feed sensor (PS17)

8.3.1.2 Delay Jam in the Cassette Pickup Assembly

The leading edge of paper does not reach the sensor after the cassette 1/2 pickup motor has started to rotate.


Start key ON
or print start
INTR / PRINT
Pickup motor
Jam check
Sensor N
[1]
[1]
Normal
Error
[1]:specific length of feed in time
: increase in motor speed

F-8-16

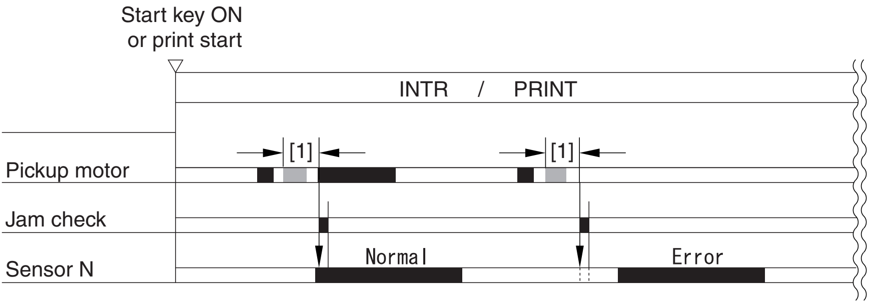
T-8-3

Source of paper	Motor	Sensor
Cassette 1	cassette 1 pickup motor	cassette 1 retry sensor (PS10)
Cassette 2	cassette 2 pickup motor	cassette 2 retry sensor (PSX11)

8.3.2 Stationary Jams

8.3.2.1 Common Stationary Jam

The sensor N does not go off within a specific length of time after the sensor has gone on.


Start key ON
or print start
INTR / PRINT
[1]
[1]
Pickup motor
Jam check
Sensor N
Normal
Error

[1]:specific length of feed in time

▨: increase in motor speed

F-8-17

T-8-4

Sensor
Cassette 1 retry sensor (PS10)
Cassette 2 retry sensor (PS11)
Registration sensor (PS9)
Fixing outlet sensor (PS13)
No. 1 delivery sensor (PS14)
Duplex feed sensor (PS17)

8.3.2.2 Stationary Jam at Power-On

The machine makes a check to see that there is no paper over the following sensors before it starts initial multiple rotation at power-on:

T-8-5

Sensor
Cassette 1 retry sensor (PS10)
Cassette 2 retry sensor (PS11)
Registration sensor (PS9)
Fixing inlet sensor (PS25)
Fixing outlet sensor (PS13)
No. 1 delivery sensor (PS14)
Duplex feed sensor (PS17)

8.3.3 Other Jams

8.3.3.1 Wrong Size Jam

A wrong size jam is identified when paper being used is shorter than the specified paper length.

T-8-6

Sensor
Registration sensor (PS9)

8.3.3.2 Wrong Material Jam

A wrong material jam is identified when the transparency sensor detects the wrong type of paper.

T-8-7

Sensor
Transparency sensor (PS26)

8.3.3.3 Cover Open Jam

A door open jam is identified when the machine detects the opening of the door while it is making copies/prints.

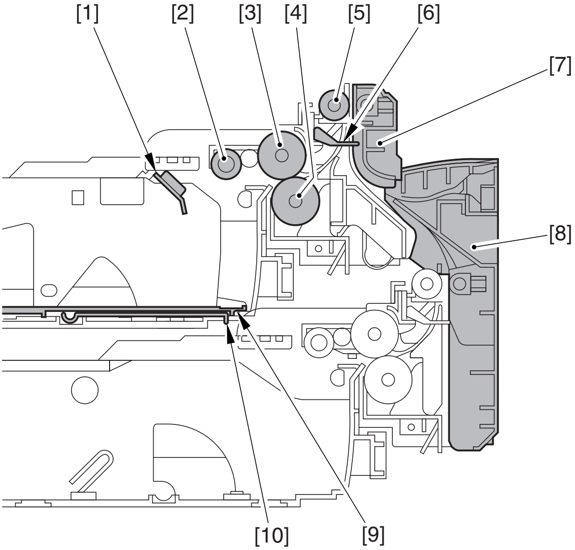
T-8-8

Sensor
Front cover open sensor (PS22)
Right cover open sensor (PS18)

8.4 Cassette

8.4.1 Overview

The paper inside the cassette is held up by the lifter plate. When pickup takes place, the pickup roller moves down to come into contact with the surface of paper. The pickup roller is moved down when the pickup solenoid goes on.
The feed roller and the separation roller serve to make sure that a single sheet of paper is moved to the feed path, and the paper is moved as far as the registration roller by the work of the vertical path roller.
The pickup vertical path roller, pickup roller, feed roller, and separation roller are driven by the cassette pickup motor.



F-8-18

[1] Cassette paper sensor
[2] Pickup roller (roller A)

[3] Feed roller (roller B)
[4] Separation roller (roller C)
[5] Pickup vertical path roller
[6] Cassette retry paper sensor
[7] Vertical path guide
[8] Lower right cover
[9] Holding plate
[10] Lifter plate

8.4.2 Identifying the Paper Size

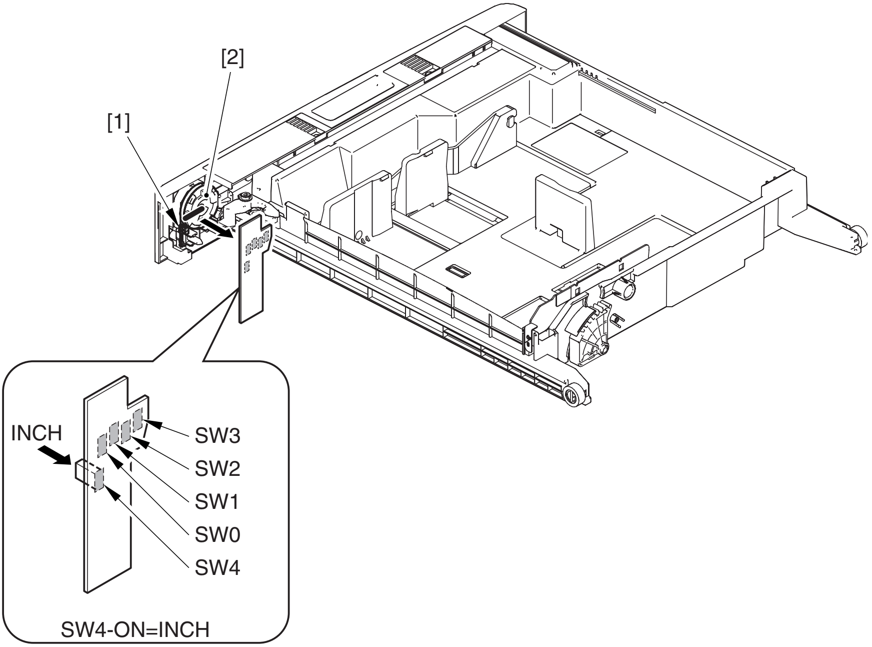
The size of paper inside the cassette is detected by the cassette size dial, and is communicated to the cassette size detection PCB.

As may as 15 positions may be detected with reference to the combinations of on and off states of the array of 4 actuators mounted to the cassette size detection PCB on the printer side and operating in conjunction with the cassette size dial.

In the absence of a cassette, all 4 actuators are off, causing the machine to assume there is no cassette.

AB/Inch Switch

The cassette size dial is equipped with a switch operated to change between AB and Inch configurations; the cassette size detecting switch will detect the configuration as soon as a cassette is fitted in the machine.


[1]
[2]
INCH
SW3
SW2
SW1
SW0
SW4
SW4-ON=INCH

F-8-19

[1] AB/Inch switch

[2] Cassette size dial

[3] Cassette size detection PCB

T-8-9

AB-configuration

Size	SW0	SW1	SW2	SW3	SW4
(no cassette)	OFF	OFF	OFF	OFF	OFF
A5R	ON	OFF	ON	ON	OFF
A4	ON	ON	ON	ON	OFF
A4R	OFF	ON	ON	ON	OFF
A3	OFF	ON	OFF	ON	OFF

AB-configuration

B5	ON	ON	OFF	ON	OFF
B5R	OFF	OFF	OFF	ON	OFF
B4	ON	OFF	OFF	ON	OFF
305×457mm	ON	ON	OFF	OFF	OFF
U1	OFF	ON	OFF	OFF	OFF
U2	OFF	ON	ON	OFF	OFF
Envelope	ON	OFF	ON	OFF	ON/OFF

SW4 is used to detect the state of the AB/Inch-configuration switch.
The machine will assume the absence of a cassette if it detects a combination not found in the table. At this time, it does not move up the cassette lifter.
Since the paper size is not identified, there will be no indication of a paper size on the control panel; when the cassette in question is selected, the machine will indicate a message prompting the supply of paper.
If an envelope size is detected, an envelope cassette must be fitted.

T-8-10

Inch-configuration

Size	SW0	SW1	SW2	SW3	SW4
(no cassette)	OFF	OFF	OFF	OFF	OFF
STMTR	ON	OFF	ON	ON	ON
LTR	ON	ON	ON	ON	ON
LTRR	OFF	ON	ON	ON	ON
LGL	OFF	ON	OFF	ON	ON
11×17	ON	ON	OFF	ON	ON
EXEC	OFF	OFF	OFF	ON	ON
12×18	ON	ON	OFF	OFF	ON

Inch-configuration

U3	OFF	ON	OFF	OFF	ON
U4	OFF	ON	ON	OFF	ON
Envelope	ON	OFF	ON	OFF	ON/OFF

SW4 is used to detect the state of the AB/Inch-configuration switch.
The machine will assume the absence of a cassette if it detects a combination not found in the table. At this time, it does not move up the cassette lifter.
Since the paper size is not identified, there will be no indication of a paper size on the control panel; when the cassette in question is selected, the machine will indicate a message prompting the supply of paper.
If an envelope size is detected, an envelope cassette must be fitted.

8.4.3 Setting Up the Universal Cassette

The following are default sizes the machine will assume when U1 through U4 are detected:

T-8-11

U1	G-LTR
U2	FLSC
U3	G-LGL
U4	A-LTR

The following is a list of sizes that may be assigned in addition to default sizes in service mode:

T-8-12

Universal U1 Through U4

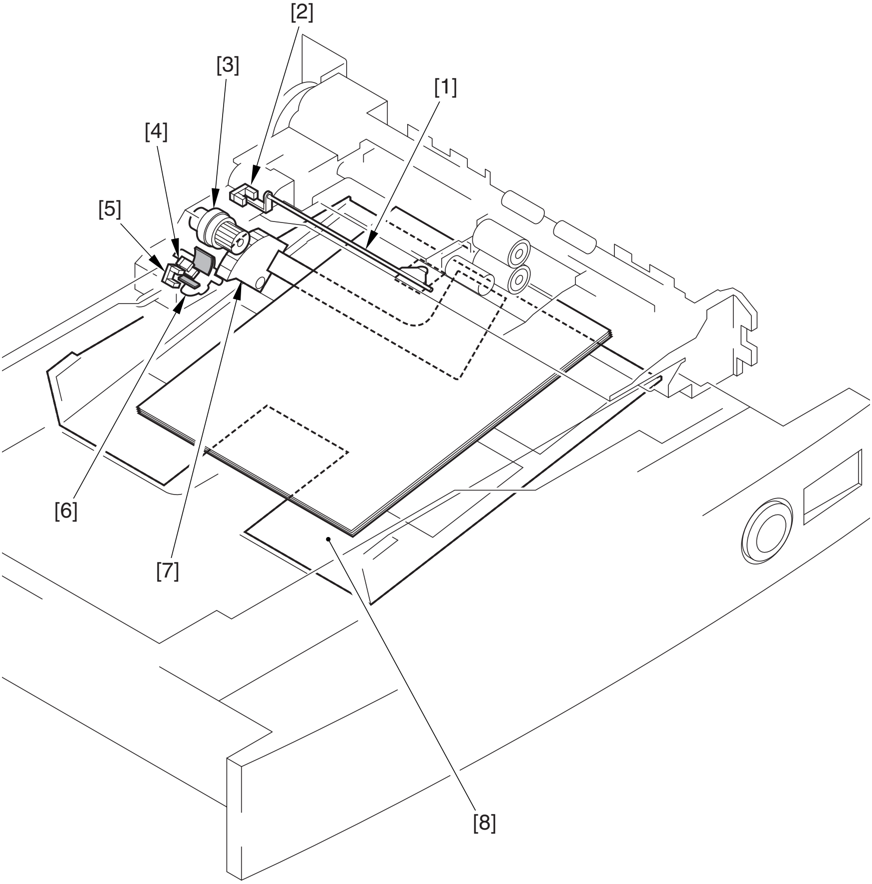
Size
FLSC
OFI
E-OFI
B-OFI
A-OFI
M-OFI
FOLI
A-FLS
G-LTR
G-LGL
A-LTR (LTR)
A-LTRR (LTRR)

8.4.4 Paper Level Sensor

The level of paper inside the cassette is checked using the following sensors:

T-8-13

	Cassette 1	Cassette 2
Paper level sensor A	PS3	PS5
Paper level sensor B	PS4	PS6
Paper sensor	PS1	PS2



F-8-20

[1] Flag

[2] Cassette paper sensor

[3] Lifter clutch

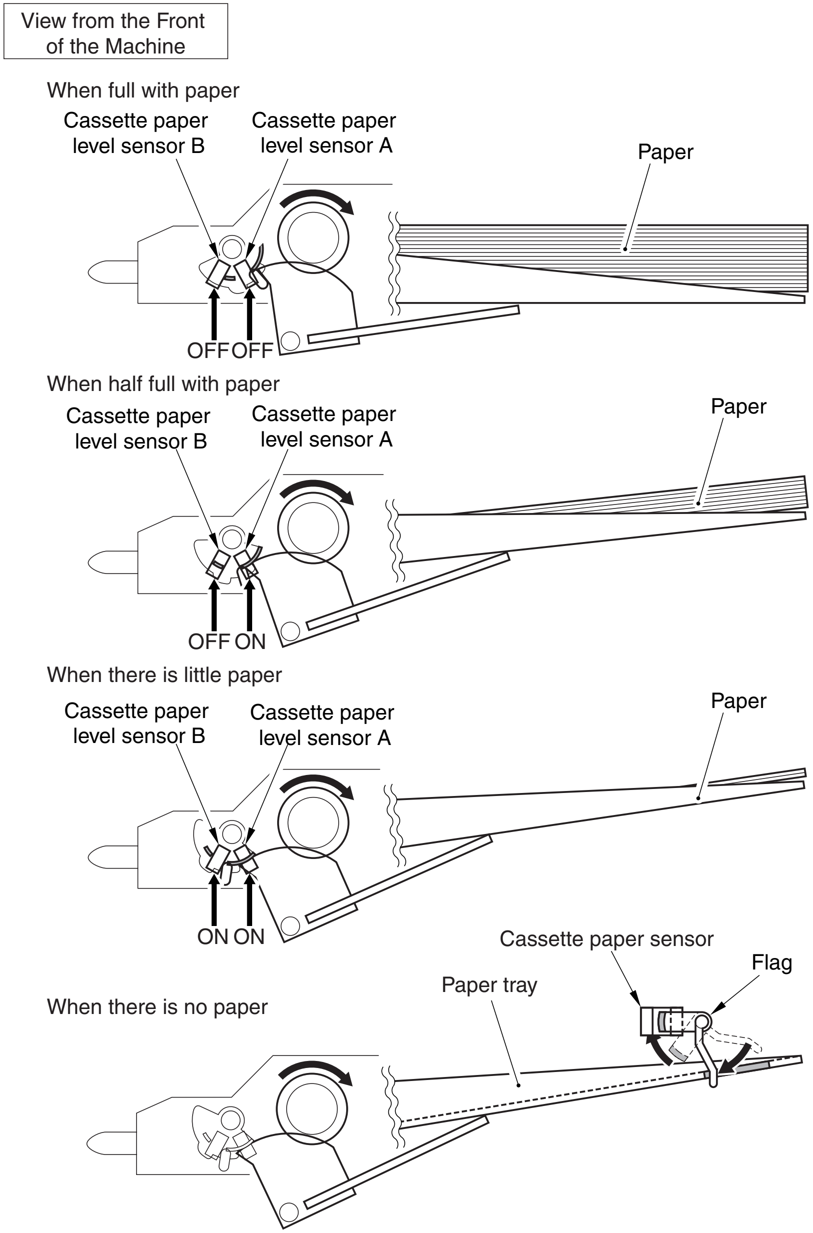
[4] Cassette paper level sensor A

[5] Cassette paper level sensor B

[6] Paper level sensor flag

[7] Lifter gear

[8] Tray


View from the Front of the Machine
When full with paper
Cassette paper level sensor B
Cassette paper level sensor A
Paper
OFF
OFF
When half full with paper
Cassette paper level sensor B
Cassette paper level sensor A
Paper
OFF
ON
When there is little paper
Cassette paper level sensor B
Cassette paper level sensor A
Paper
ON
ON
Cassette paper sensor
Flag
Paper tray
When there is no paper

F-8-21

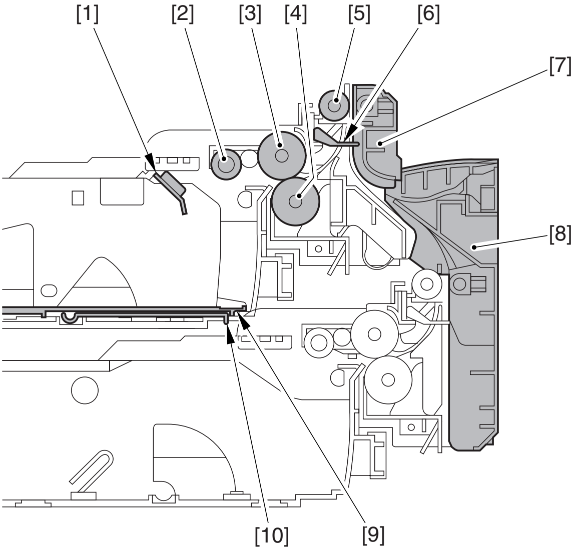
T-8-14

Paper level sensor A	**Paper level sensor B**	**Paper sensor**	**Paper level**	**Control panel indication**
OFF	OFF	OFF	100% to 50% of capacity	☰
ON	OFF	OFF	50% to 50 sheets (approx.)	⚌
ON	ON	OFF	50 sheets or less (approx.)	⚊
---	---	ON	No paper	⊔

8.5 Cassette Pick-Up Unit

8.5.1 Overview

The paper inside the cassette is held up by the work of the lifer plate. When pickup takes place, the pickup roller moves down to come into contact with the stack of paper. The pickup roller starts to move down when the pickup solenoid goes on. The feed roller and the separation roller make sure that no more than a single sheet of paper is moved forward to the paper path. The vertical path roller serves to move paper as far as the registration roller. The pickup path roller, pickup roller, feed roller, and separation roller are driven by the pickup motor.



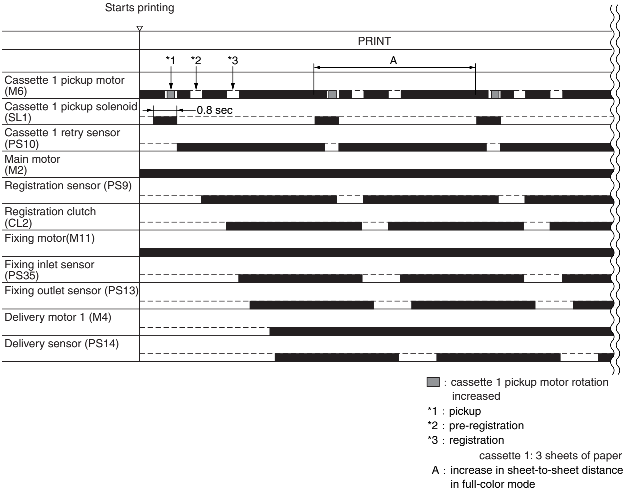
F-8-22

[1] Cassette paper sensor
[2] Pickup roller (roller A)
[3] Feed roller (roller B)

[4] Separation roller (roller C)
[5] Pickup vertical path roller
[6] Cassette retry paper sensor
[7] Vertical path guide
[8] Lower right cover
[9] Holding plate
[10] Lifter plate

8.5.2 Basic Sequence of Operations

Basic Sequence



▨ : cassette 1 pickup motor rotation increased
*1 : pickup
*2 : pre-registration
*3 : registration
cassette 1: 3 sheets of paper
A : increase in sheet-to-sheet distance in full-color mode

F-8-23

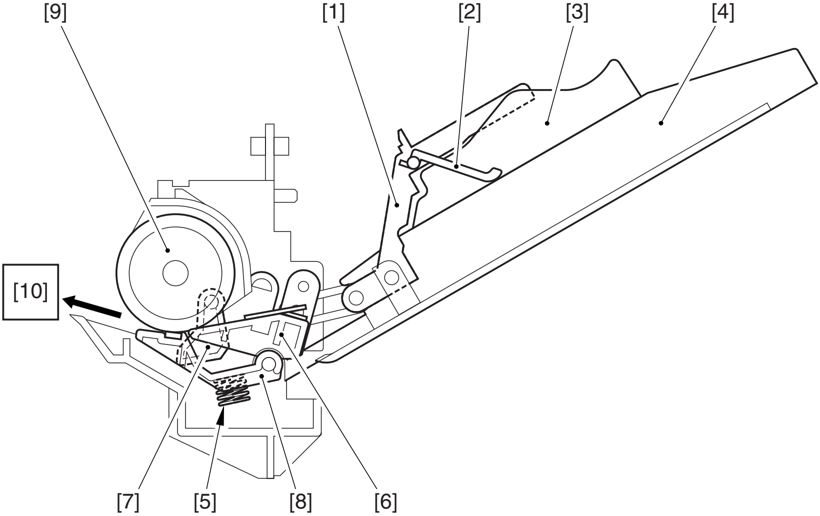
8.6 Manual Feed Pickup Unit

8.6.1 Overview

The paper in the tray of the manual feed pickup unit is forced against the manual feed pickup roller by the work of the pickup guide plate; the manual feed pickup roller and the separation pad serve to make sure that only a single sheet of paper is separated and moved into the machine:

(1) the pickup guide plate is locked in place at all times, and does not require drive for pickup operation.

(2) multi-pickup roller is driven by the main motor (M2) through the manual feed pickup clutch (CL1).



F-8-24

[1] Upper guide

[2] Stopper plate

[3] Side guide

[4] Manual feed pickup tray

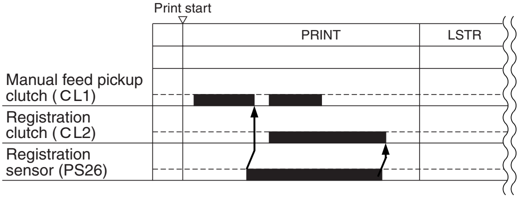
[5] Pressure spring
[6] Holding plate
[7] Manual feed paper sensor flag
[8] Separation pad
[9] Manual feed pickup roller
[10] (to registration roller assembly)

REF

The machine's manual feed pickup unit is not equipped with a sensor that may detect the last sheet of paper.

8.6.2 Basic Sequence of Operations

The multi-pickup roller starts to rotate when the manual pickup clutch (CL1) goes on to start upper separation to pick up a single sheet of paper. When the leading edge of the sheet reaches the registration sensor (PS26) and is moved a specific distance, the manual pickup clutch goes off, causing the sheet to arch in the registration roller area.
When the registration clutch (CL2) goes on, the manual feed pickup clutch (CL1) once again goes on to pick up paper. The manual feed pickup clutch (CL1) goes off immediately before the trailing edge of paper moves past the manual feed pickup roller; thereafter, the registration roller serves to pull off the paper.

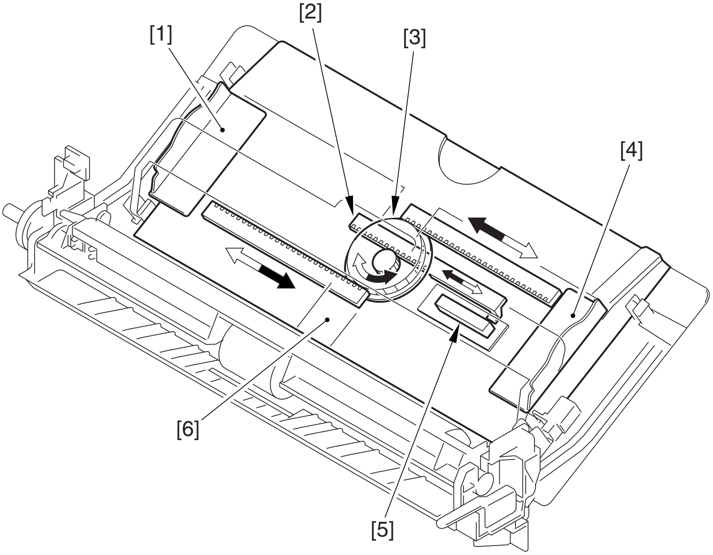


F-8-25

8.6.3 Identifying the Paper Size

The width of paper is detected with reference to the output of the variable resistor (SVR1), which operates in conjunction with the movement of the side guide.

The side guide in the manual feed tray is set when the user moves it to place paper in the cassette.



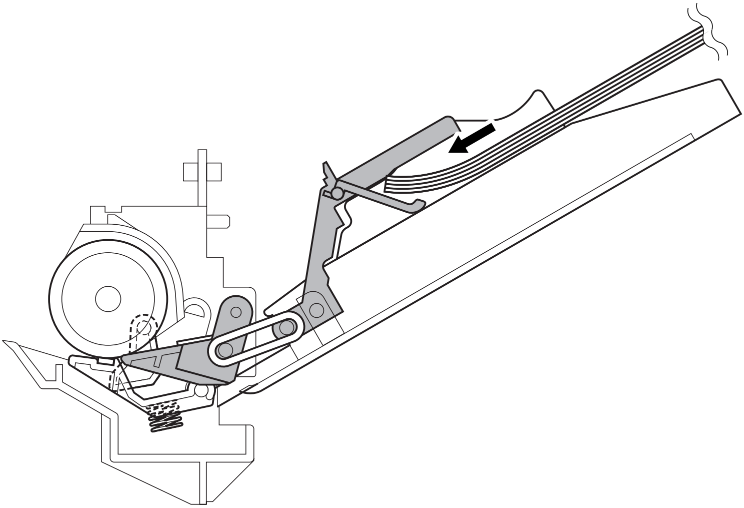
F-8-26

[1] Side guide (rear)
[2] Resistance arm
[3] Center gear
[4] Side guide (front)
[5] Variable resistor (SVR1)
[6] Manual feed tray

8.6.4 Paper Retaining Mechanism

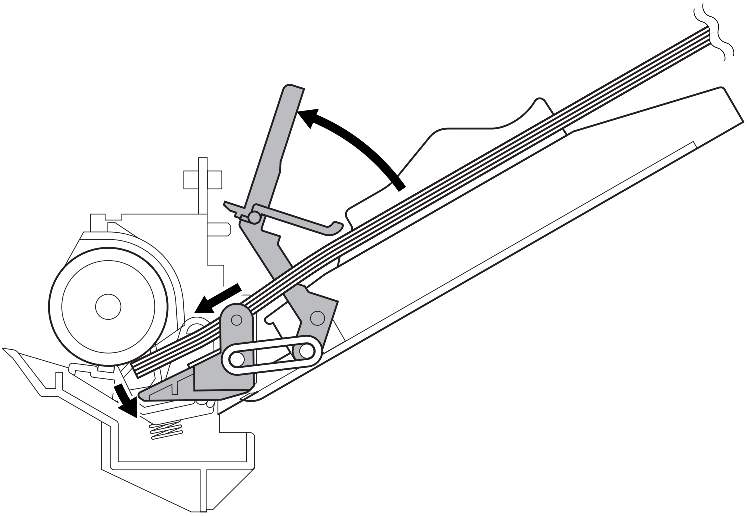
The holding plate of the machine's cassette is fixed in position at all times, and does not move up/down at time of pickup, and must temporarily be released when paper is set between it and the manual feed pickup roller. It is linked to the upper guide so that it opens when the user opens the guide; to prevent the user from placing paper without opening the upper guide, the guide is equipped with a stopper plate.

1) When the upper guide is closed,
the holding plate is locked in place,
and the stopper plate prevents the user from placing paper.



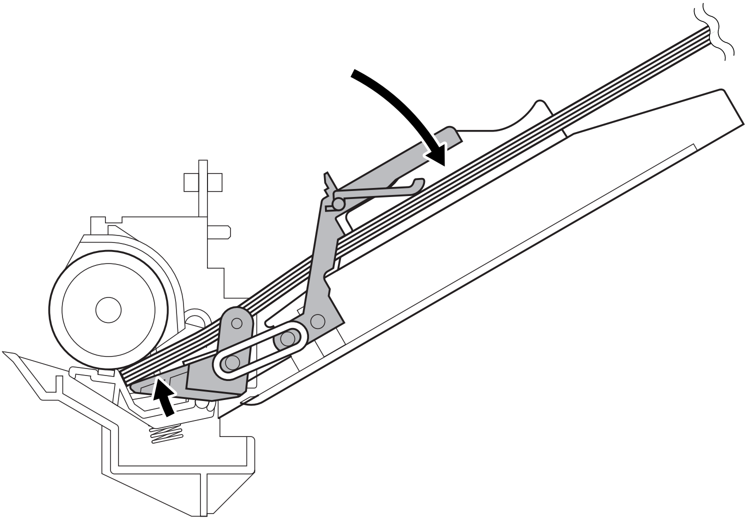
F-8-27

2) When the upper guide is open,
the holding plate is freed,
and the stopper plate opens, permitting the user to place paper.



F-8-28

3) When the upper guide is closed once again,
the holding plate becomes locked in position once again.

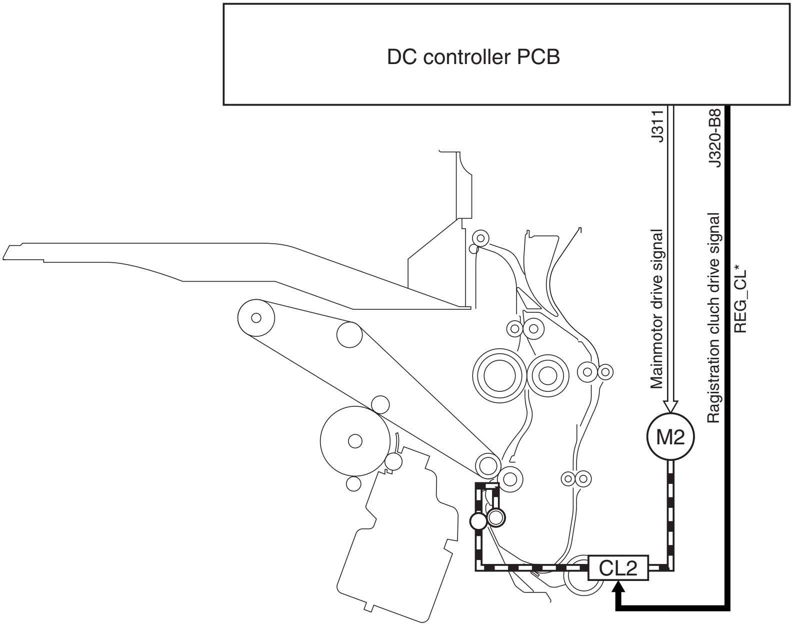


F-8-29

8.7 Registration Unit

8.7.1 Overview

The registration roller is driven by the main motor (M2). The registration clutch (CL2) found between the registration roller and the main motor goes on and off to control the registration roller so that the paper and the image on the intermediate transfer belt will match.


DC controller PCB
J311
J320-B8
Mainmotor drive signal
Ragistration cluch drive signal
REG_CL*
M2
CL2

F-8-30

8.7.2 Controlling the Horizontal Registration

The machine is not equipped with a mechanism to detect horizontal registration for the 1st and 2nd sides of a sheet, but it permits the adjustment of the 2nd side image horizontal registration (image write start position) in service mode, with each source of paper given its own setting to suit possible differences among the sheets placed in the sources.

The leading edge registration and the degree of arching for the 2nd side of a double-sided copy/print must be adjusted separately from those for the 1st side, owing to the different paths 1st and 2nd sides taken to the registration roller.

1st Side

COPIER> ADJUST> FEED-ADJ> horizontal registration adjustment for the 2nd side of a double-sided copy/print (pickup from cassette 1)

COPIER> ADJUST> FEED-ADJ> ADJ-C2RE horizontal registration adjustment for the 2nd side of a double-sided copy/print (pickup from cassette 2)

COPIER> ADJUST> FEED-ADJ> ADJ-C3RE horizontal registration adjustment for the 2nd side of a double-sided copy/print (pickup from cassette 3)

COPIER> ADJUST> FEED-ADJ> ADJ-C4RE horizontal registration adjustment for the 2nd side of a double-sided copy/print (pickup from cassette 4)

COPIER> ADJUST> FEED-ADJ> ADJ-DKRE horizontal registration adjustment for the 2nd side of a double-sided copy/print (pickup from side paper deck)

COPIER> ADJUST> FEED-ADJ> ADJ-MFRE horizontal registration adjustment for the 2nd side of a double-sided copy/print (pickup from manual feed tray)

COPIER> ADJUST> FEED-ADJ> RG-REFE leading edge registration adjustment for the 2nd side of a double-sided copy/print

COPIER> ADJUST> FEED-ADJ> LOOPREFE registration arching adjustment for the 2nd side of a double-sided copy/print

REF

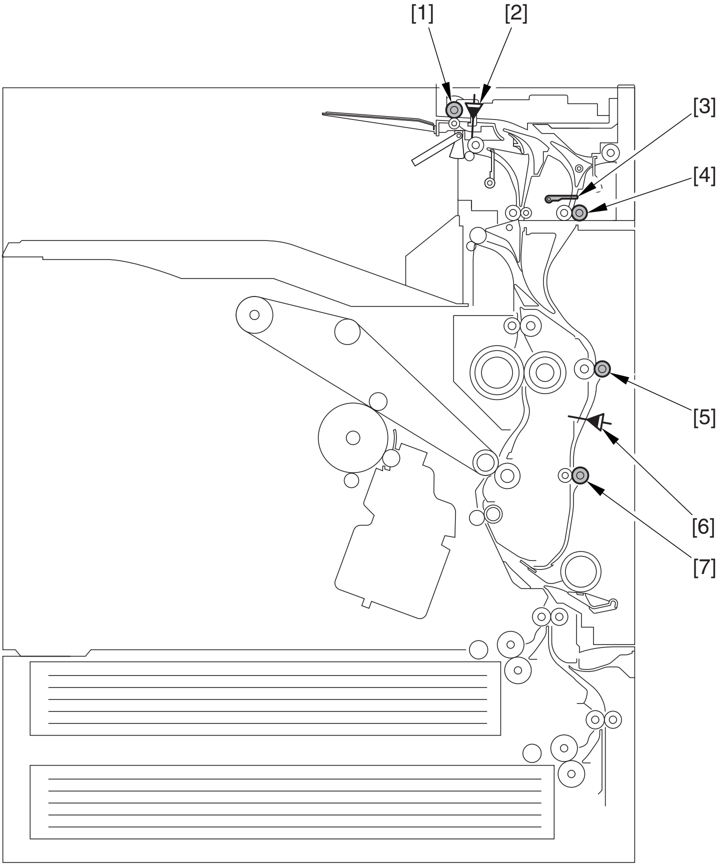
The term "2nd side of a double-sided copy/print" used in reference to the machine's service mode refers to the side for which an image is formed second in order, and it corresponds to the 1st side of the original.

8.8 Duplex Feeding Unit

8.8.1 Overview

A pair of rollers exist inside the depleting unit, and these rollers are driven by the main motor (M2) with the help of the duplexing clutch (CL6).
The machine uses a different roller to turn over the paper for double-sided copying/printing: if it is not equipped with a delivery accessory, it uses the delivery roller; if it is equipped with a delivery accessory, it uses the reversing roller.

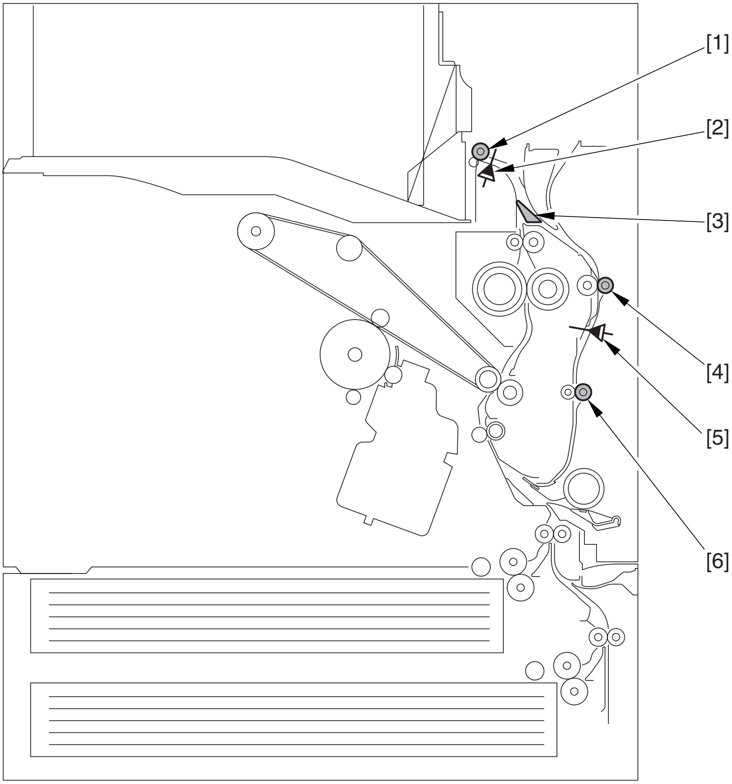
Note:
Inner 2-Way Tray-C1
Finisher-L1, Finisher-Q1, or Saddle Finisher-Q2
Configuration with an Accessory Installed



F-8-31

[1] Reversing roller
[2] No. 2 delivery sensor (PS1A)
[3] Duplex inlet sensor (PS3A)
[4] Duplex inlet roller
[5] Depleting feed roller 1
[6] Duplexing feed sensor (PS17)
[7] Duplexing feed roller 2

Configuration Without an Accessory Installed

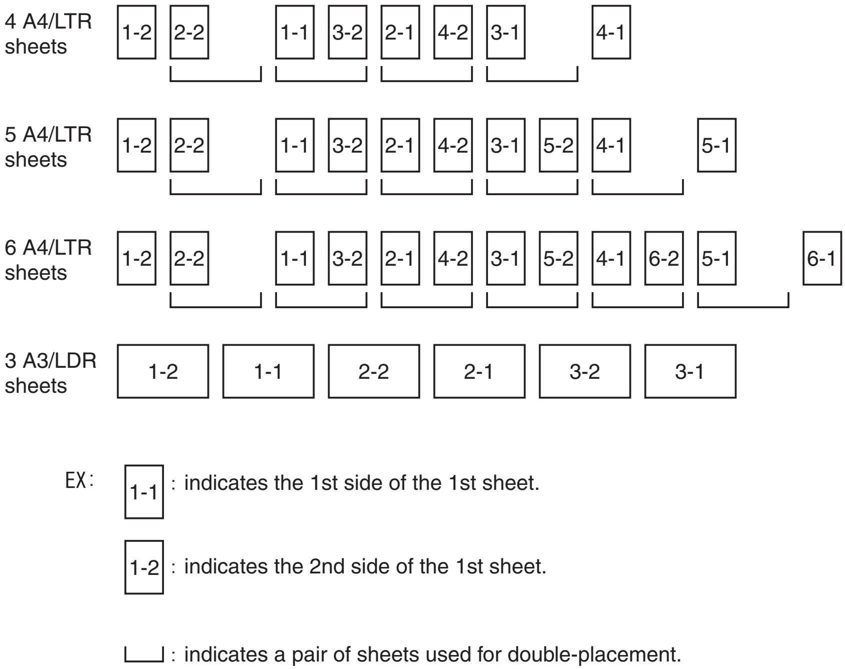


F-8-32

[1] Delivery roller
[2] Delivery sensor 1 (PS14)
[3] Reversing flapper
[4] Duplexing feed roller 1
[5] Duplexing feed sensor (PS17)
[6] Duplexing feed roller 2

8.8.2 Sequence of Image Formation

The machine goes thorough the following sequence to form images when making double-sided copies/prints:

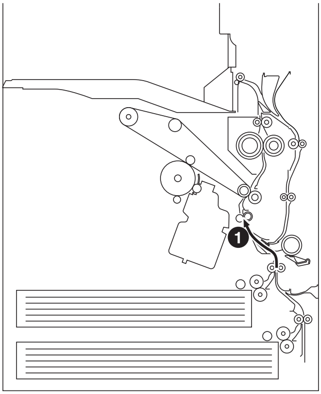

4 A4/LTR sheets
1-2 2-2 1-1 3-2 2-1 4-2 3-1 4-1
5 A4/LTR sheets
1-2 2-2 1-1 3-2 2-1 4-2 3-1 5-2 4-1 5-1
6 A4/LTR sheets
1-2 2-2 1-1 3-2 2-1 4-2 3-1 5-2 4-1 6-2 5-1 6-1
3 A3/LDR sheets
1-2 1-1 2-2 2-1 3-2 3-1
EX:
1-1 : indicates the 1st side of the 1st sheet.
1-2 : indicates the 2nd side of the 1st sheet.
: indicates a pair of sheets used for double-placement.

F-8-33

8.8.3 Flow of Paper (wo/ Delivery Option)

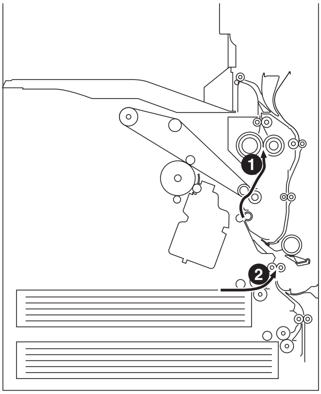
A4/LTR, Black-and-White, 5 Sheets

A number in a circle indicates the 1st side, while a number in a square indicates the 2nd side. Although a different sheet-to-sheet interval is used for full-color operation, the sequence of image formation is the same.



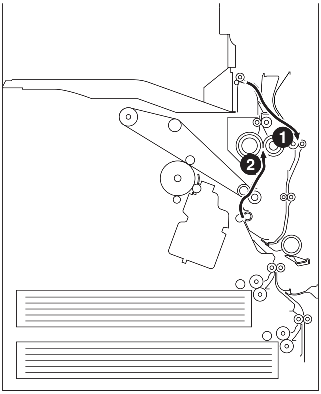
F-8-34

The 1st sheet is picked up.



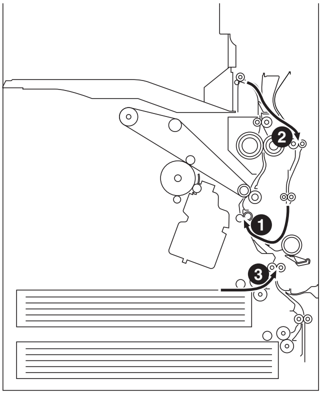
F-8-35

An image is formed for the 2nd side of the 1st sheet. The 2nd sheet is picked up.



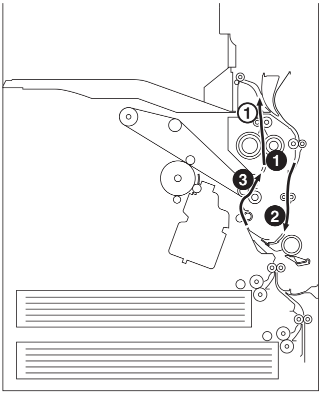
F-8-36

The 1st sheet is turned over and moved to duplexing registration. An image is formed for the 2nd side of the 2nd sheet.



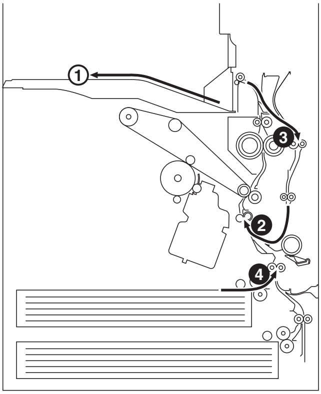
F-8-37

The 1st sheet is moved for registration once again. The 2nd sheet is turned over and moved for duplexing registration. The 3rd sheet is picked up.



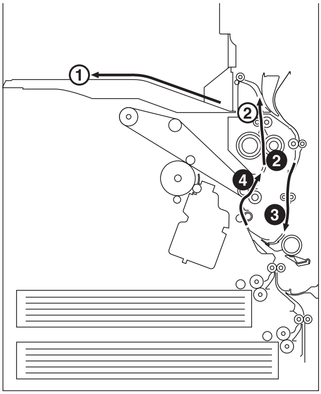
F-8-38

An image is formed for the 1st side of the 1st sheet and for the 2nd side of the 3rd sheet. The 2nd sheet is moved for duplexing.



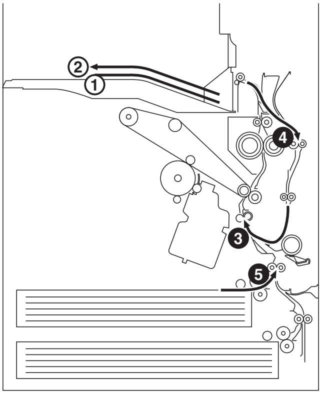
F-8-39

The 1st sheet is delivered. The 3rd sheet is turned over and moved for duplexing registration. The 2nd sheet is moved for registration once again. The 4th sheet is picked up.



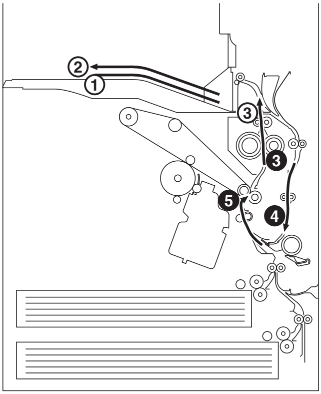
F-8-40

An image is formed for the 1st side of the 2nd sheet and for the 2nd side of the 4th sheet. The 3rd sheet is moved for duplexing.



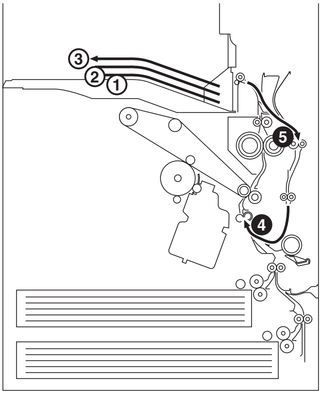
F-8-41

The 2nd sheet is delivered. The 4th sheet is reversed and is moved for duplexing registration. The 3rd sheet is picked for registration once again. The 5th sheet is picked up.



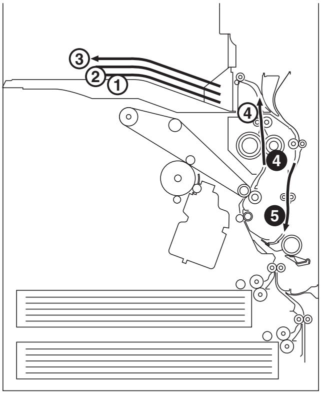
F-8-42

An image is formed for the 1st side of the 3rd sheet and for the 2nd side of the 5th sheet. The 4th sheet is moved for duplexing.



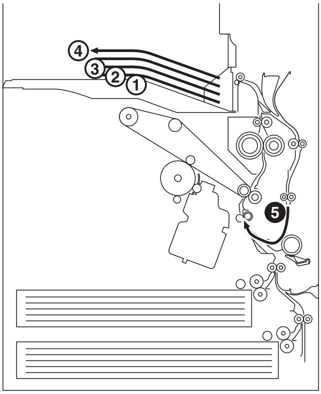
F-8-43

The 3rd sheet is delivered. The 5th sheet is turned over and moved for registration. The 4th sheet is moved for registration once again.



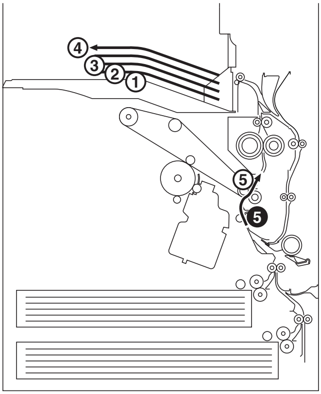
F-8-44

An image is formed for the 1st side of the 4th sheet. The 5th sheet is moved for duplexing.



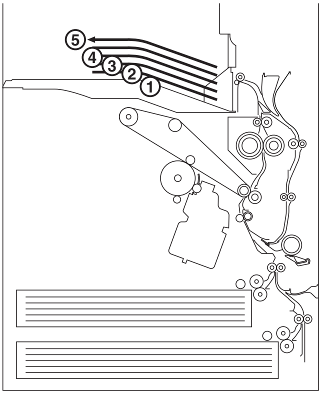
F-8-45

The 4th sheet is delivered. The 5th sheet is moved for registration once again.



F-8-46

An image is formed for the 1st side of the 5th sheet.

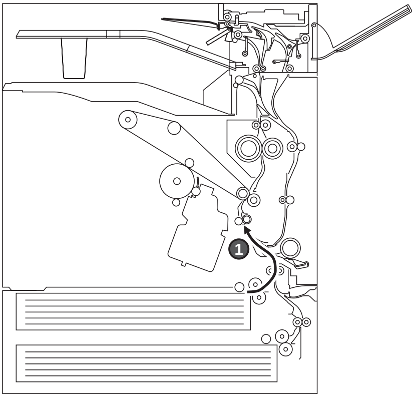


F-8-47

The 5th sheet is delivered.

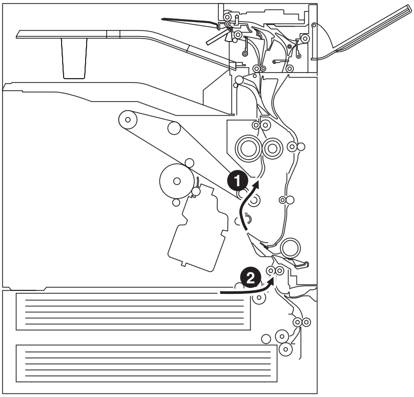
8.8.4 Flow of Paper (w/ Delivery option -internal delivery)

A4/LTR, 5 sheets, Delivery to tray 1/2
Although a different sheet-to-sheet interval is used for full-color operation, the sequence of image formation is the same.



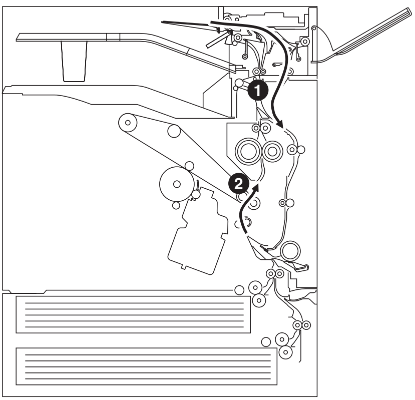
F-8-48

The 1st sheet is picked up.



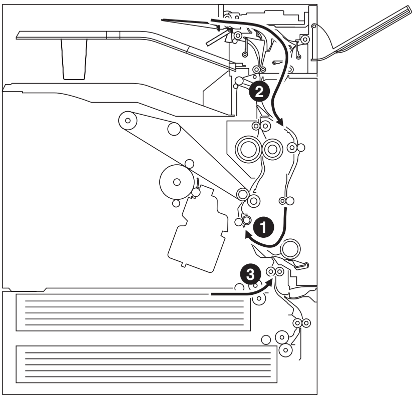
F-8-49

An image is formed for the 2nd side of the 1st sheet. The 2nd sheet is picked up.



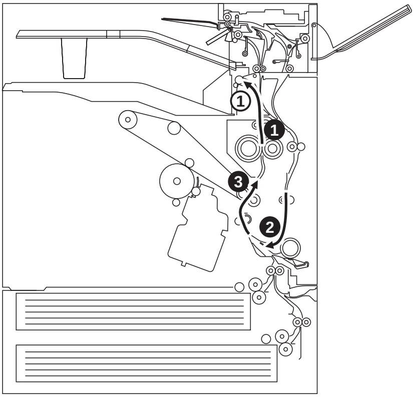
F-8-50

The 1st sheet is turned over, and is moved for duplexing registration. An image is formed for the 2nd side of the 2nd sheet.



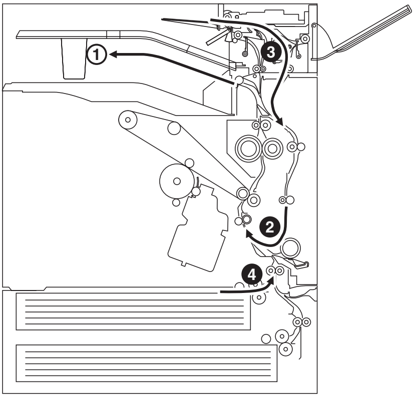
F-8-51

The 1st sheet is moved for registration once again. The 2nd sheet is turned over and moved for duplexing registration. The 3rd sheet is picked up.



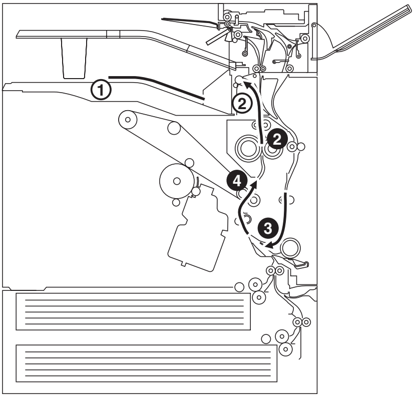
F-8-52

An image is formed for the 1st side of the 1st sheet and the 2nd side of the 3rd sheet. The 2nd sheet is moved for duplexing.



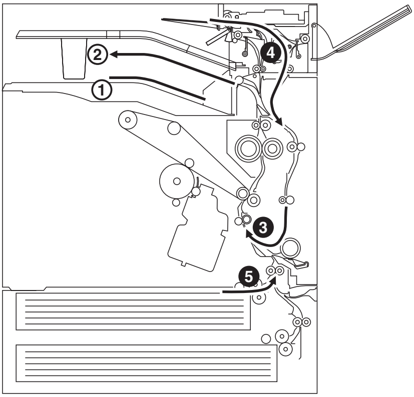
F-8-53

The 1st sheet is delivered. The 3rd sheet is turned over and is moved for duplexing registration. The 2nd sheet is moved for registration once again. The 4th sheet is picked up.



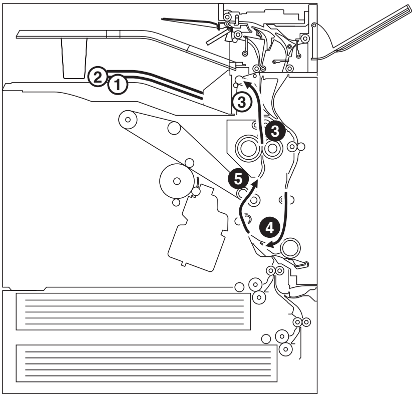
F-8-54

An image is formed for the 1st side of the 2nd sheet and for the 2nd side of the 4th sheet. The 3rd sheet is moved for duplexing.



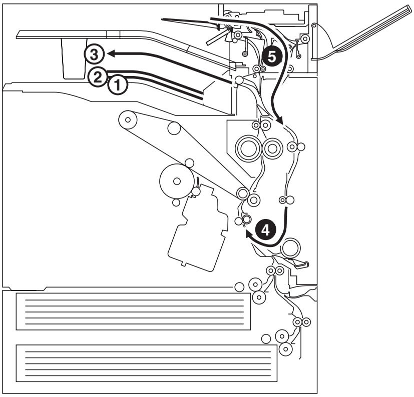
F-8-55

The 2nd sheet is delivered. The 4th sheet is turned over, and is moved for duplexing registration. The 3rd sheet is moved for registration once again. The 5th sheet is picked up.



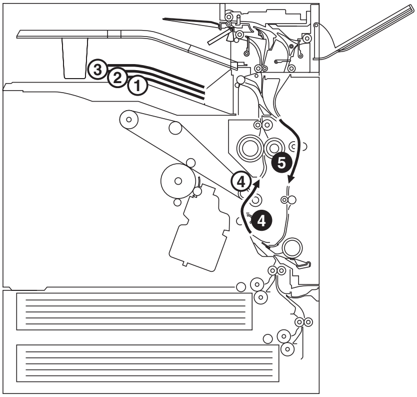
F-8-56

An image is formed for the 1st side of the 3rd sheet and for the 2nd side of the 5th sheet. The 5th sheet is moved for duplexing.



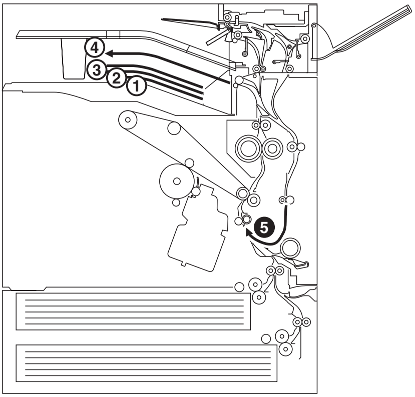
F-8-57

The 3rd sheet is delivery. The 5th sheet is turned over, and is moved for duplexing registration. The 4th sheet is moved for registration once again.



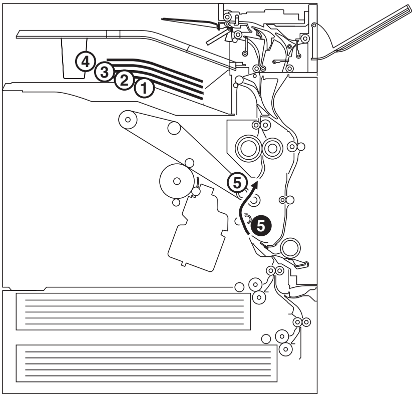
F-8-58

An image is formed for the 1st side of the 4th sheet. The 5th sheet is moved for duplexing.



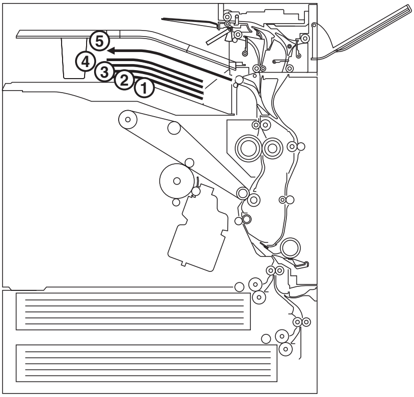
F-8-59

The 4th sheet is delivered. The 5th sheet is moved for registration once again.



F-8-60

An image is formed for the 1st side of the 5th sheet.

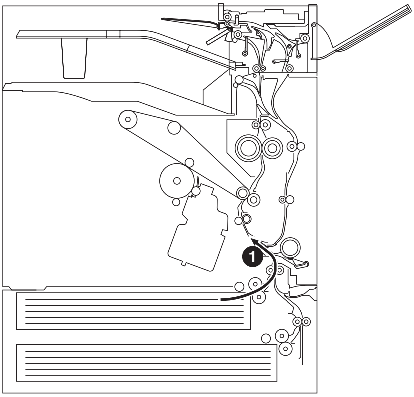


F-8-61

The 5th sheet is delivered.

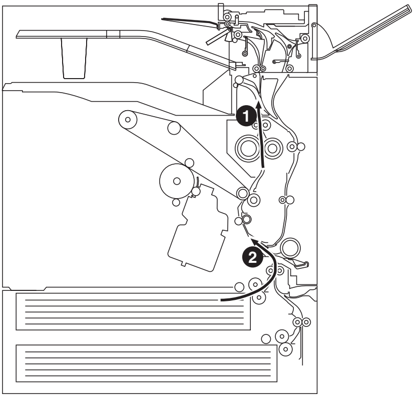
8.8.5 Flow of Paper (w/ Delivery option -external delivery)

A4/LTR, 3 sheets, Delivery to tray 3
Although a different sheet-to-sheet interval is used for full-color or A3/LDR size operation, the sequence of image formation is the same.



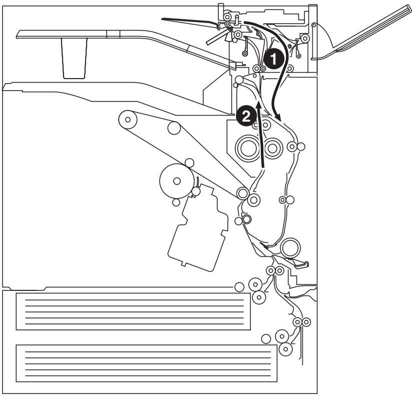
F-8-62

The 1st sheet is picked up.



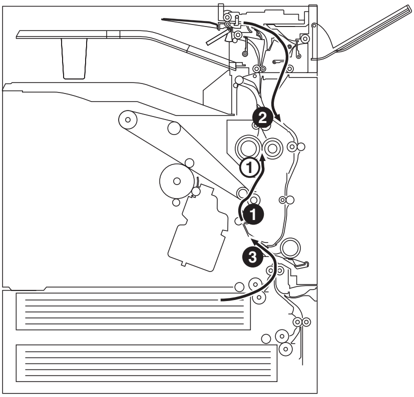
F-8-63

An image is formed for the 2nd side of the 1st sheet. The 2nd sheet is picked up.



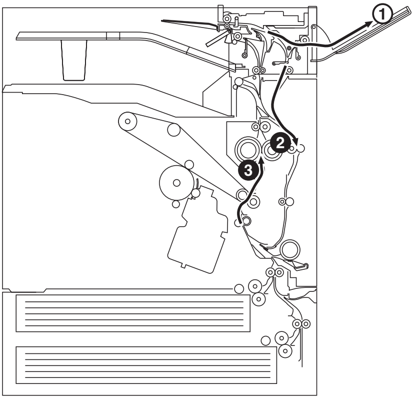
F-8-64

The 1st sheet is turned over, and is moved for duplexing registration. An image is formed for the 2nd side of the 2nd sheet.



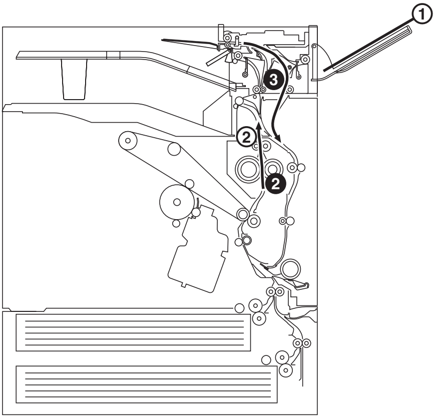
F-8-65

An image is formed for the 1st side of the 1st sheet. The 2nd sheet is turned over, and is moved for duplexing registration. The 3rd sheet is picked up.



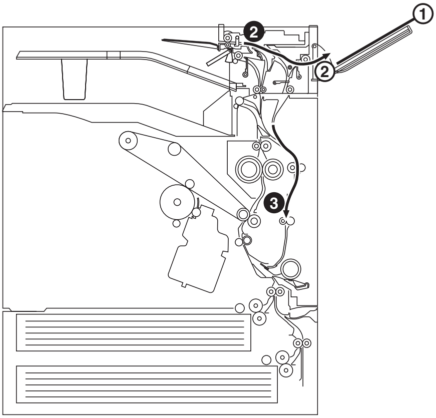
F-8-66

The 1st sheet is turned over, and an image is formed for the 2nd side of the 3rd sheet. The 2nd sheet is kept in wait for duplexing registration.



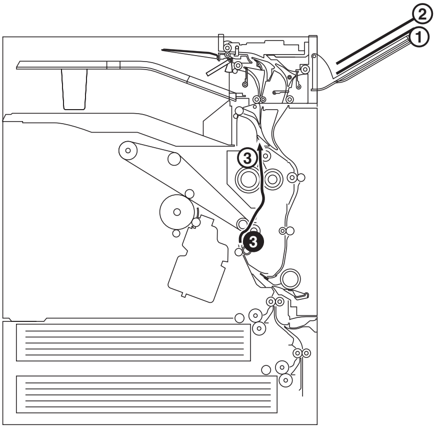
F-8-67

An image is formed for the 1st side of the 2nd sheet. The 3rd sheet is tuned over, and is moved for duplexing registration.



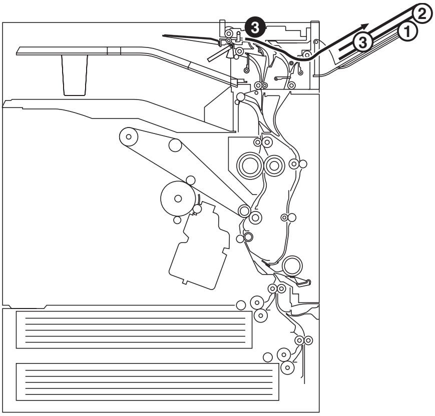
F-8-68

The 2nd sheet is turned over, and is delivered. The 3rd sheet is moved for duplexing.



F-8-69

An image is formed for the 1st side of the 3rd sheet.



F-8-70

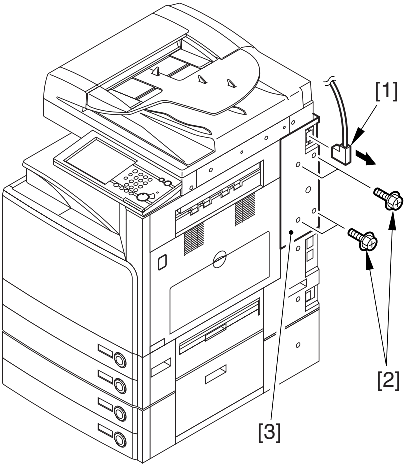
The 3rd sheet is turned over, and is delivered.

8.9 Parts Replacement Procedure

8.9.1 Pickup Unit 1

8.9.1.1 Removing the Right Cover (upper rear)

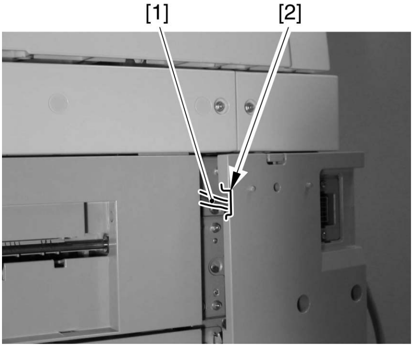
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-71

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

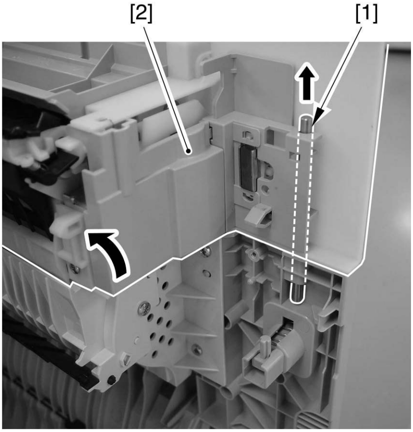
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-72

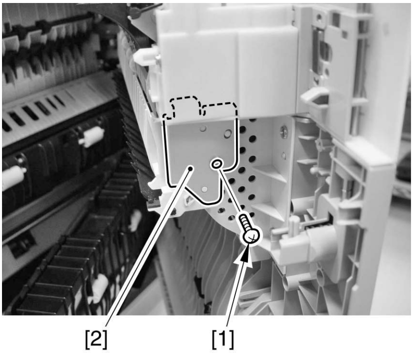
8.9.1.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-73

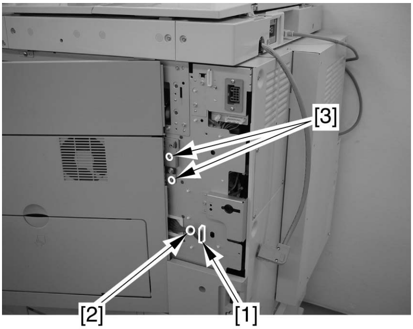
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-74

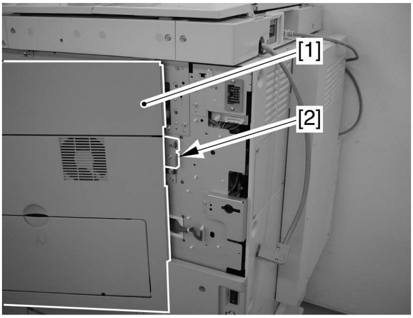
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-75

6) Detach the right door [1] together with the hinge [2].

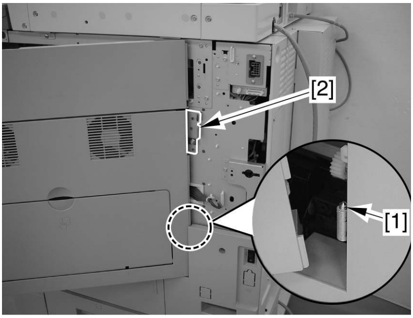


F-8-76

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



F-8-77

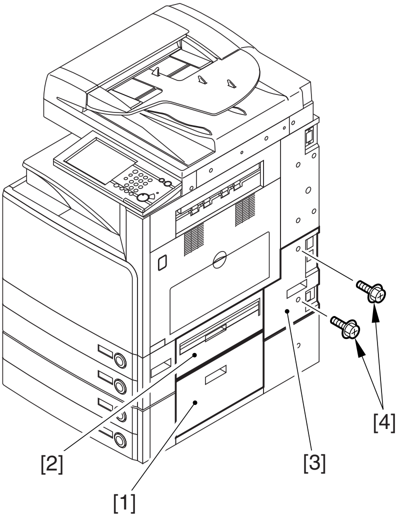
⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.9.1.3 Removing the Right Cover (lower rear)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower rear) [3].



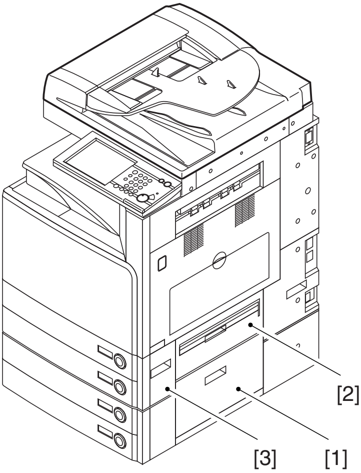
F-8-78

8.9.1.4 Removing the Right Cover (lower front)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

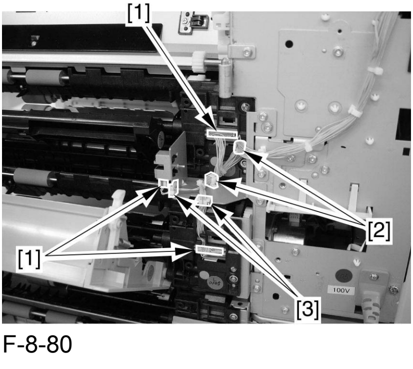
3) Remove the 2 screws, and detach the right cover (lower front) [3].



F-8-79

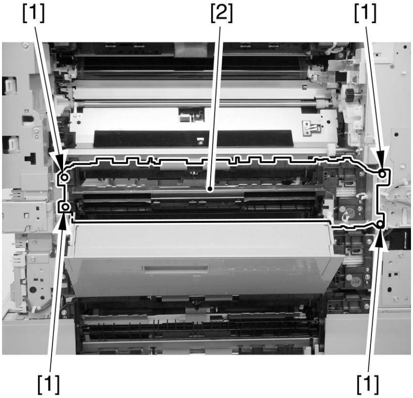
8.9.1.5 Removing the Pickup Assembly 1

1) Slide out the cassette 1/2.
2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-80

3) Remove the 4 screws [1], and take out the pickup unit 1 [2].

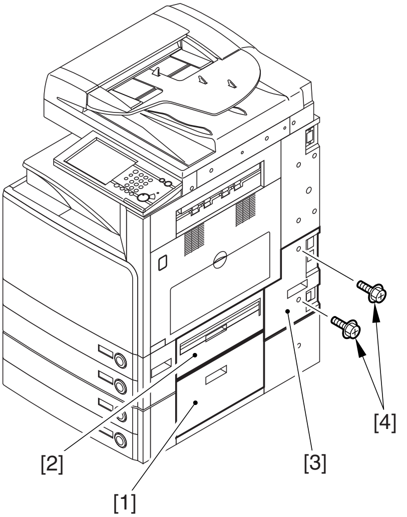


F-8-81

8.9.2 Pickup Unit 2

8.9.2.1 Removing the Right Cover (lower rear)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



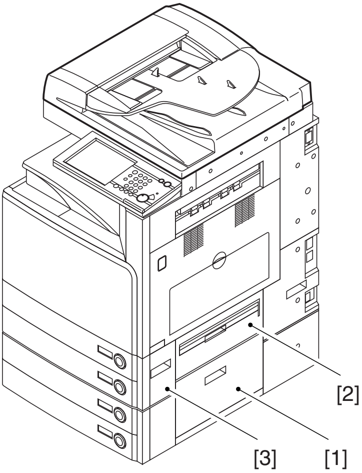
F-8-82

8.9.2.2 Removing the Right Cover (lower front)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower front) [3].

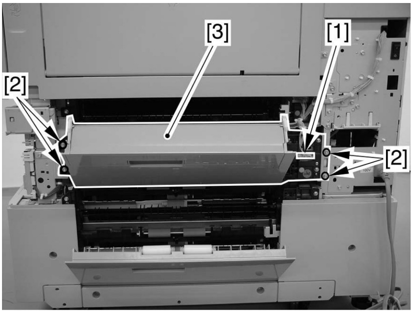


F-8-83

8.9.2.3 Removing the Pickup Assembly 2

1) Slide out the cassette 1/2.

2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].

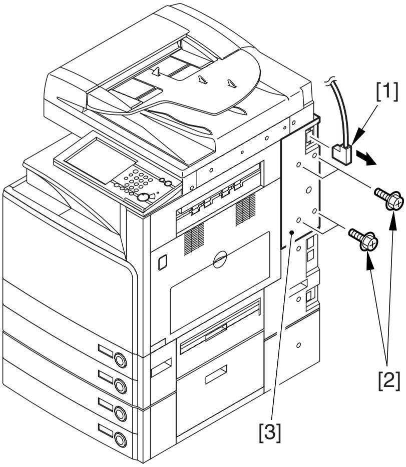


F-8-84

8.9.3 Sensor Mounting Plate

8.9.3.1 Removing the Right Cover (upper rear)

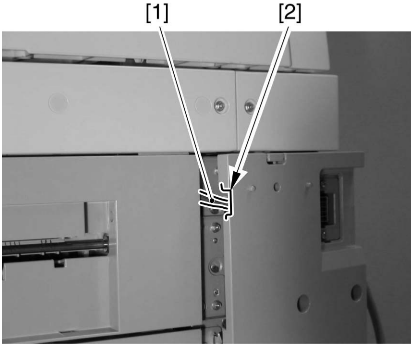
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-85

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

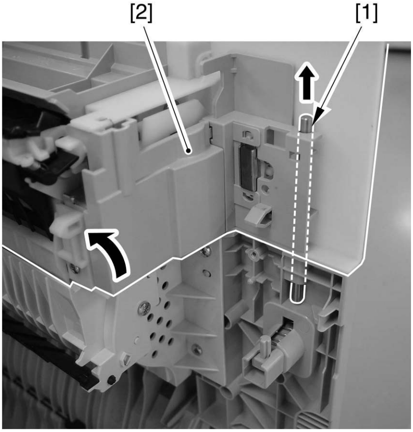
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-86

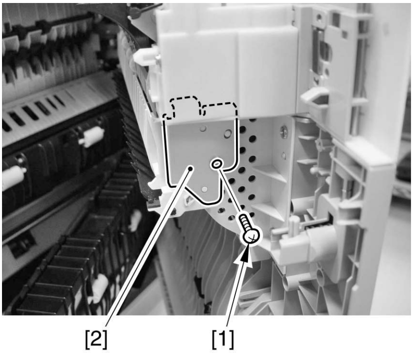
8.9.3.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-87

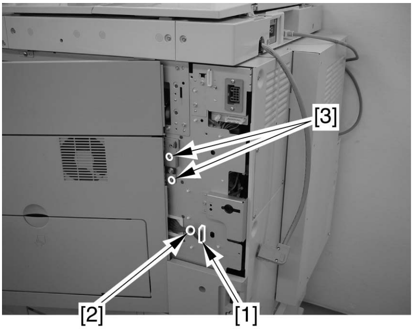
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-88

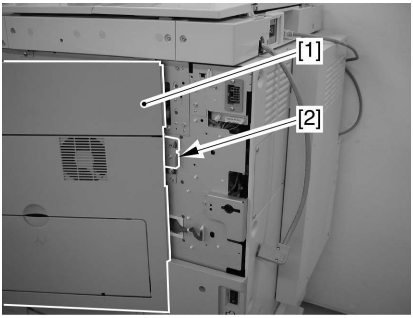
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-89

6) Detach the right door [1] together with the hinge [2].

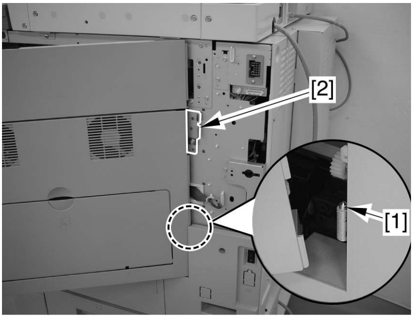


F-8-90

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

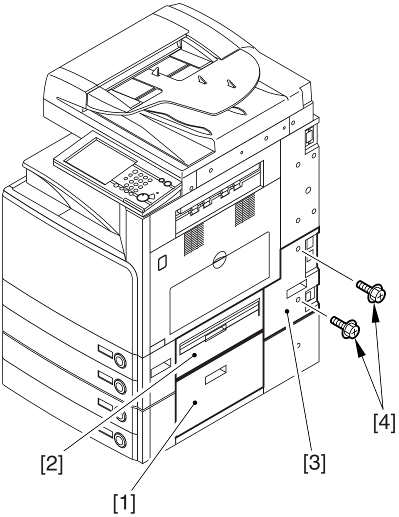


F-8-91

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.9.3.3 Removing the Right Cover (lower rear)

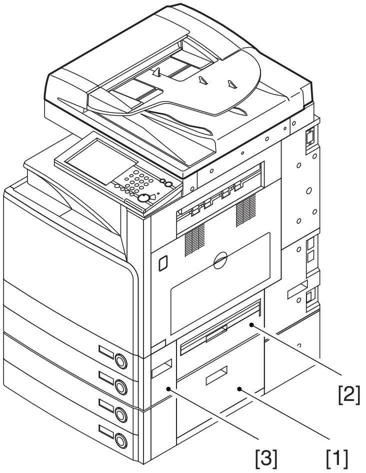
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-92

8.9.3.4 Removing the Right Cover (lower front)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].

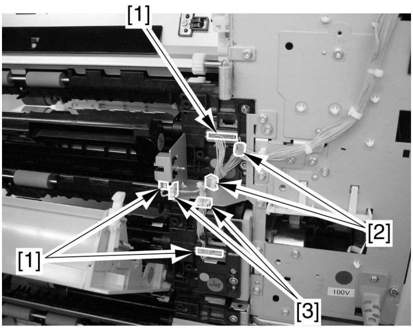


F-8-93

8.9.3.5 Removing the Pickup Assembly 1

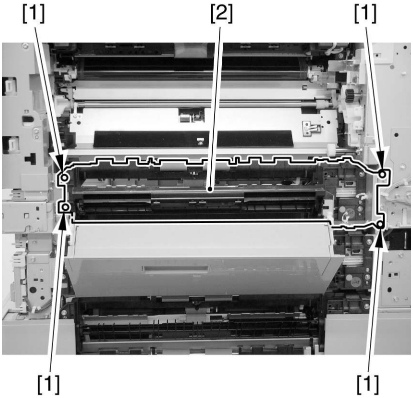
1) Slide out the cassette 1/2.

2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-94

3) Remove the 4 screws [1], and take out the pickup unit 1 [2].

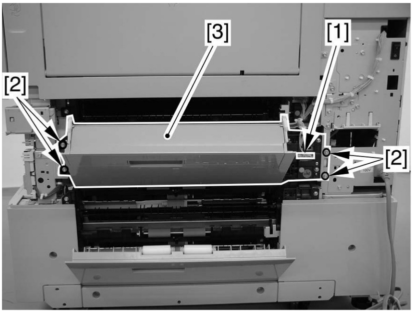


F-8-95

8.9.3.6 Removing the Pickup Assembly 2

1) Slide out the cassette 1/2.

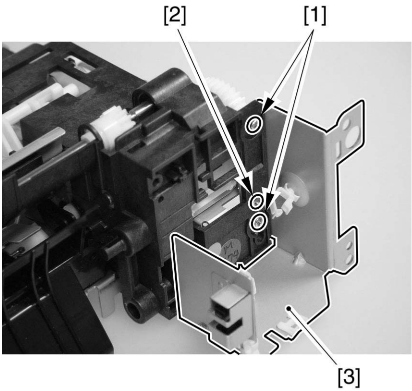
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-96

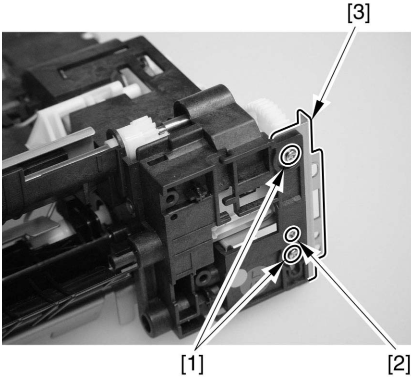
8.9.3.7 Removing the Sensor Base

1) Remove the 2 TP screws [1] and the binding screw [2] from the rear of the pickup assembly, and detach the bracket [3].



F-8-97

Pickup Unit 1

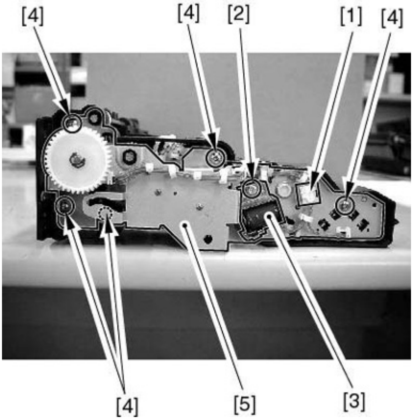


F-8-98

Pickup Unit 2

2) Disconnect the connector [1], and remove the screw; then, detach the cassette pickup solenoid [3].

3) Remove the bushing and the 5 screws [4]; then, detach the sensor base [5].

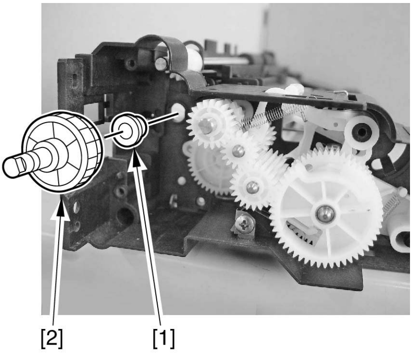


F-8-99

8.9.3.8 Mounting the Sensor Base

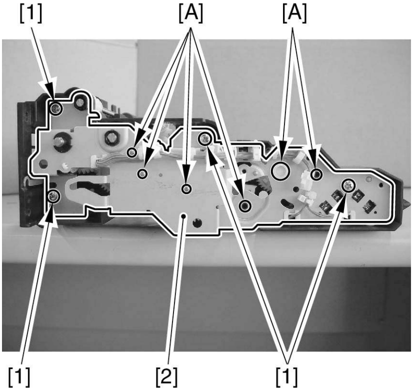
⚠Take care not to orient the pickup unit facing down when mounting the sensor base; otherwise, the gears will fall out.

1) After fitting the bushing [1] to the frame, mount the gear shaft [2].



F-8-100

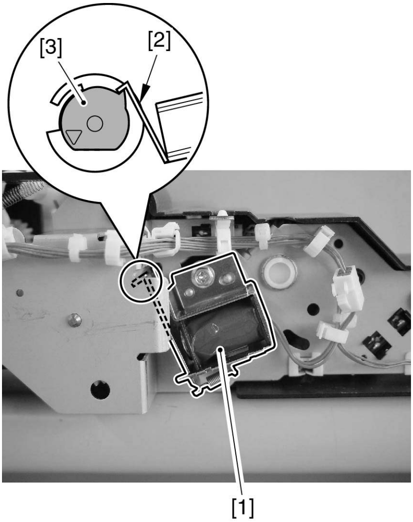
2) Fit the 6 points [A] indicated in the figure in the holes of the base; then, mount the sensor base [2] using 4 screws [1].



F-8-101

3) Mount the gear [1] and the E-ring [2].

⚠Be sure not to leave out the pickup solenoid [1]. When mounting it, be sure that the stop [2] is fully engaged with the cam gear [3].



F-8-102

⚠Try turning the gears to be sure that they turn without resistance.

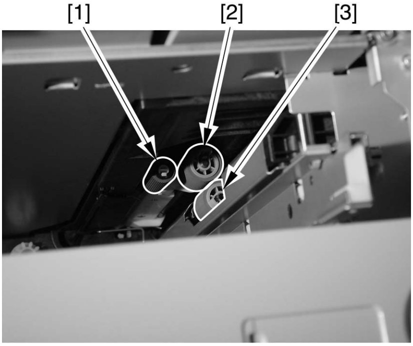
8.9.4 Pickup Roller

8.9.4.1 Removing the Pickup Roller/Feed Roller/Separation Roller

1) Slide out the cassette.

2) Open the right door (in the case of the separation roller).

3) Pick the tabs of the individual rollers, and detach the pickup roller [1], feed roller [2], and separation roller [3].



F-8-103

⚠Point to Note When Replacing the Feed/Separation Roller 1

The collar (roller core) of the machine's feed/separation roller is black.

Be sure not to use a collar (mint green) used for the feed/separation roller of a different model; otherwise, the ingredients used in the roller will build up on the intermediate transfer belt, causing transfer faults.

⚠Point to Note When Replacing the Feed/Separation Roller 2

The collar (roller core) of a separation/ feed roller shipped as a service part is black.

Although some machines come with a separation/feed roller that has a gray collar, be sure to use a separation/feed roller with a black collar if you need to replace the roller.

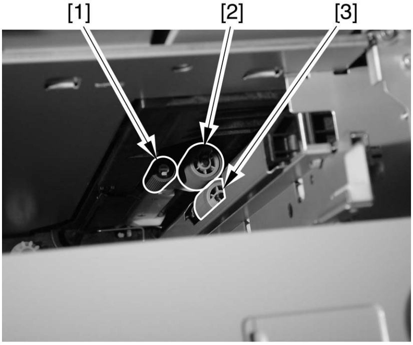
8.9.5 Feed Roller

8.9.5.1 Removing the Pickup Roller/Feed Roller/Separation Roller

1) Slide out the cassette.

2) Open the right door (in the case of the separation roller).

3) Pick the tabs of the individual rollers, and detach the pickup roller [1], feed roller [2], and separation roller [3].



F-8-104

⚠Point to Note When Replacing the Feed/Separation Roller 1

The collar (roller core) of the machine's feed/separation roller is black.

Be sure not to use a collar (mint green) used for the feed/separation roller of a different model; otherwise, the ingredients used in the roller will build up on the intermediate transfer belt, causing transfer faults.

⚠Point to Note When Replacing the Feed/Separation Roller 2

The collar (roller core) of a separation/ feed roller shipped as a service part is black.

Although some machines come with a separation/feed roller that has a gray collar, be sure to use a separation/feed roller with a black collar if you need to replace the roller.

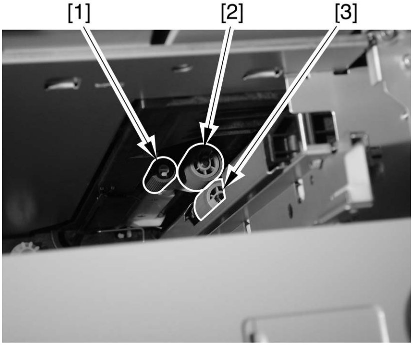
8.9.6 Separation Roller

8.9.6.1 Removing the Pickup Roller/Feed Roller/Separation Roller

1) Slide out the cassette.

2) Open the right door (in the case of the separation roller).

3) Pick the tabs of the individual rollers, and detach the pickup roller [1], feed roller [2], and separation roller [3].



F-8-105

⚠Point to Note When Replacing the Feed/Separation Roller 1

The collar (roller core) of the machine's feed/separation roller is black.

Be sure not to use a collar (mint green) used for the feed/separation roller of a different model; otherwise, the ingredients used in the roller will build up on the intermediate transfer belt, causing transfer faults.

⚠Point to Note When Replacing the Feed/Separation Roller 2

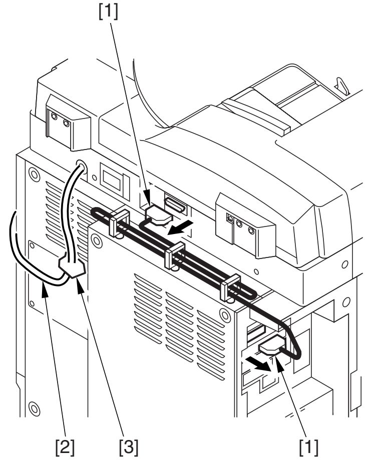
The collar (roller core) of a separation/ feed roller shipped as a service part is black.

Although some machines come with a separation/feed roller that has a gray collar, be sure to use a separation/feed roller with a black collar if you need to replace the roller.

8.9.7 Cassette Pickup Motor 1

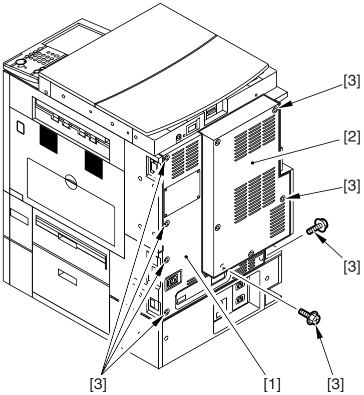
8.9.7.1 Removing the Rear Cover

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-106

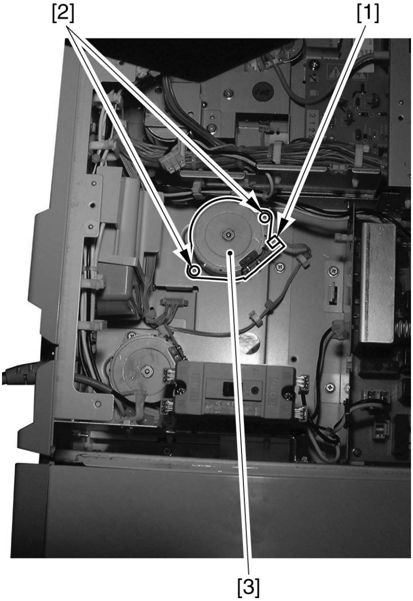
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-8-107

8.9.7.2 Removing the Cassette Pickup Motor 1

1) Disconnect the connector [1].
2) Remove the 2 screws [2], and detach the pickup motor 1 [3].



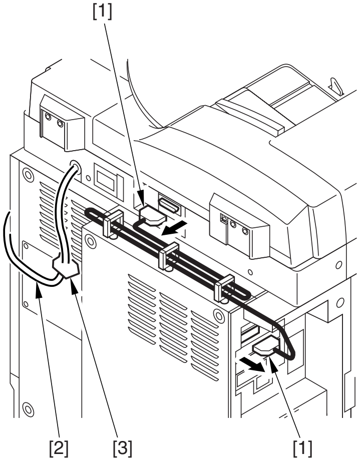
F-8-108

8.9.8 Cassette Pickup Motor 2

8.9.8.1 Removing the Rear Cover

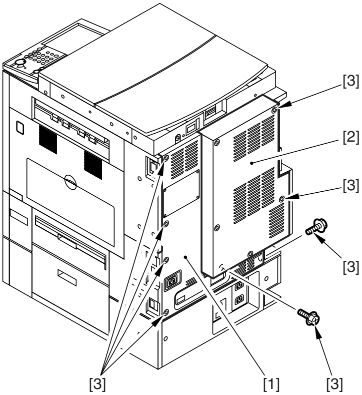
1) Disconnect the 2 connectors [1] of the reader communication cable.

2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-109

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])

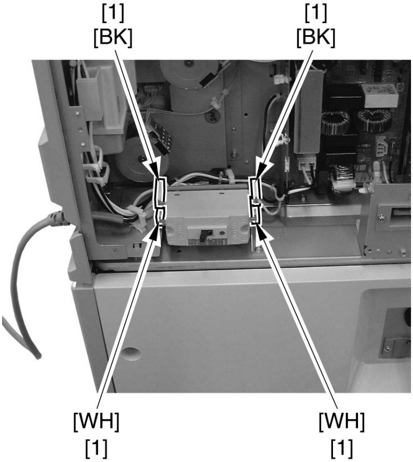


F-8-110

8.9.8.2 Removing the Leakage Breaker

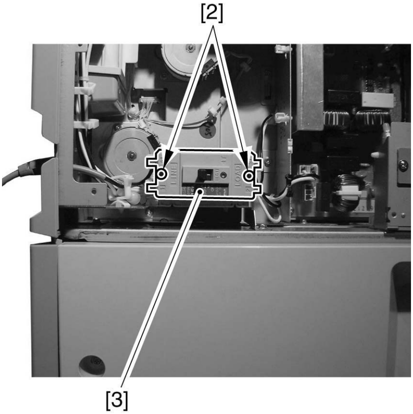
1) Remove the 4 fastons [1].

⚠The cords connected to the fastons are color-coded; be sure the colors are correctly matched when connecting them once again.



F-8-111

2) Remove the 2 screws [2], and detach the leakage breaker [3].

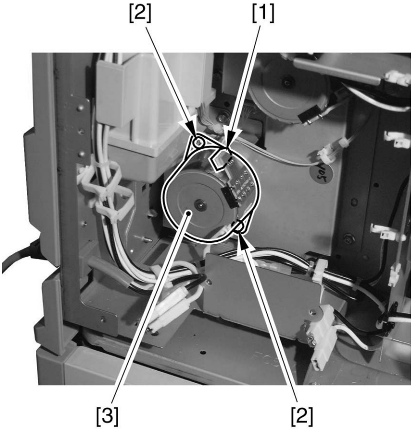


F-8-112

8.9.8.3 Removing the Cassette Pickup Motor 2

1) Disconnect the connector [1].

2) Remove the 2 screws [2], and detach the pickup motor 2 [3].

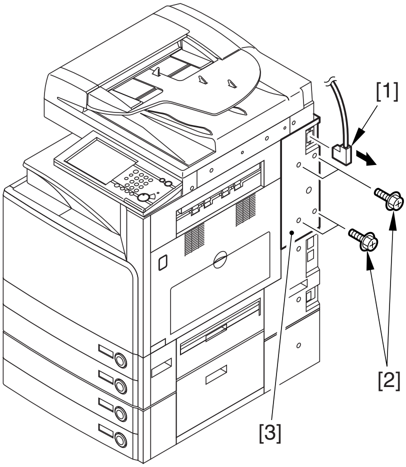


F-8-113

8.9.9 Cassette Size Detection Sensor

8.9.9.1 Removing the Right Cover (upper rear)

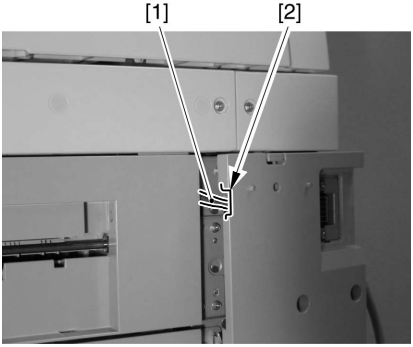
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-114

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

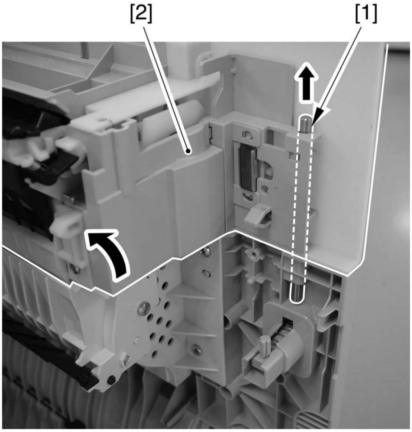


F-8-115

8.9.9.2 Removing the Right Door

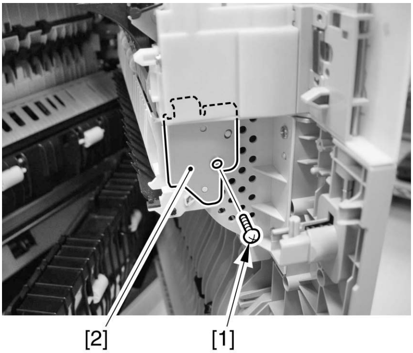
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-116

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.

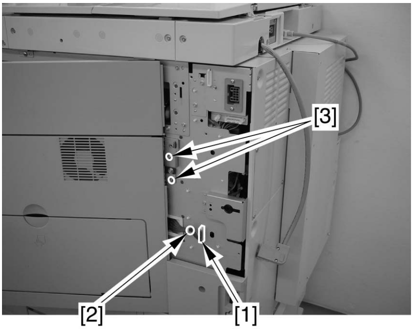


F-8-117

4) Disconnect the connector [1], and remove the clamp [2].

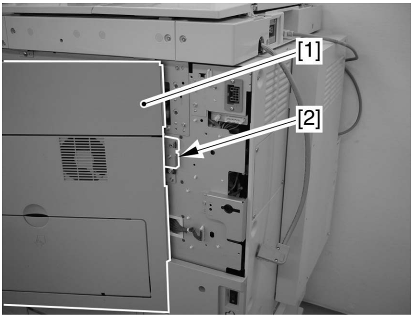
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-8-118

6) Detach the right door [1] together with the hinge [2].

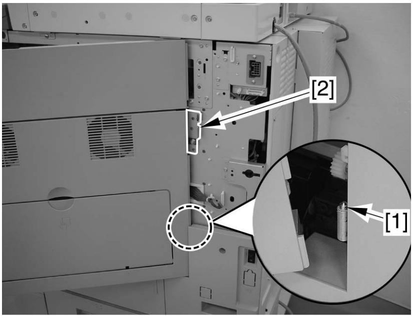


F-8-119

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



F-8-120

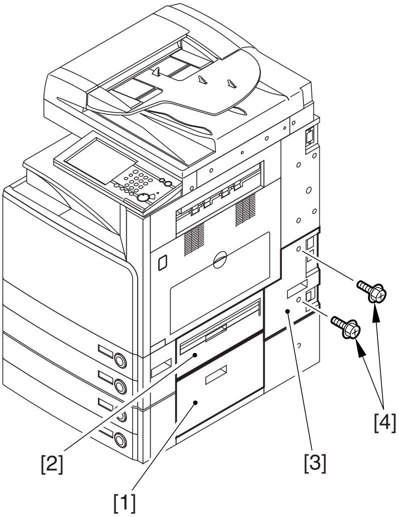
⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.9.9.3 Removing the Right Cover (lower rear)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower rear) [3].



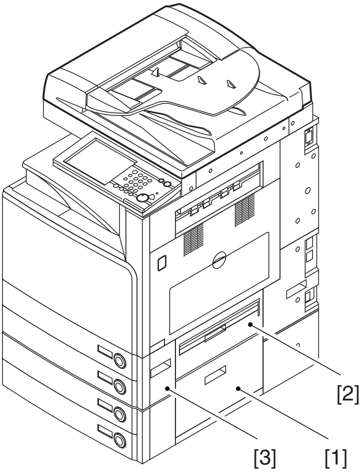
F-8-121

8.9.9.4 Removing the Right Cover (lower front)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower front) [3].

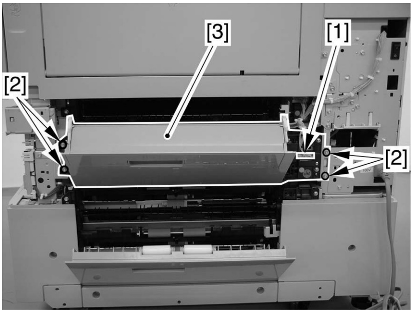


F-8-122

8.9.9.5 Removing the Pickup Assembly 2

1) Slide out the cassette 1/2.

2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].

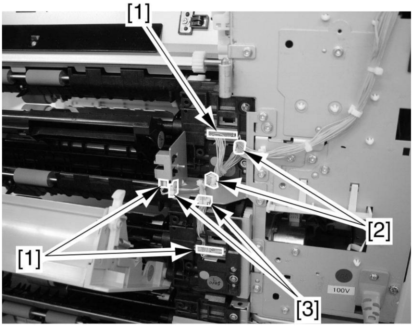


F-8-123

8.9.9.6 Removing the Pickup Assembly 1

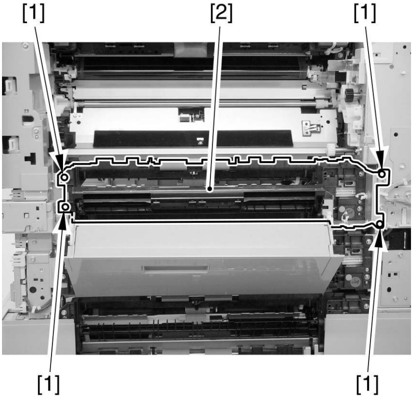
1) Slide out the cassette 1/2.

2) Disconnect that 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-124

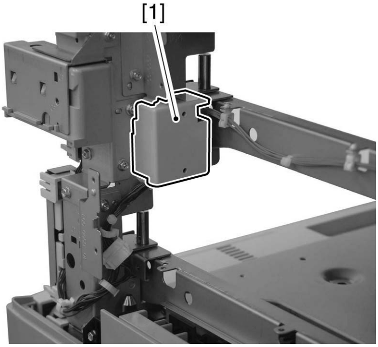
3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



F-8-125

8.9.9.7 Removing the Cassette Size Sensor

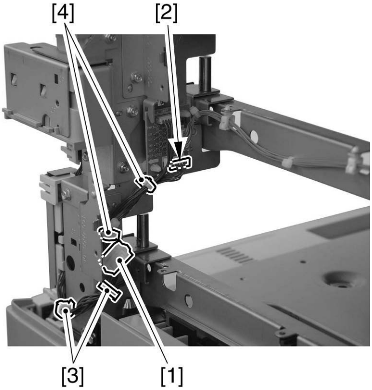
1) Remove the snap stop, and detach the PCB cover [1].



F-8-126

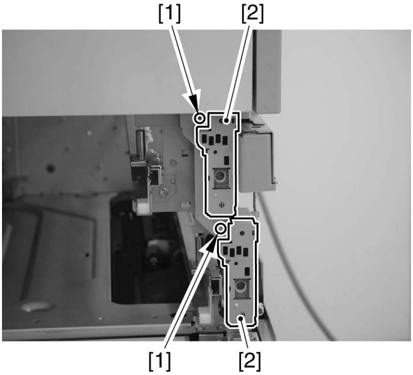
2) Disconnect the connector from the cassette size sensor relay PCB (in the case of the size sensor 1, disconnect the connector [1]; in the case of the size sensor 2, disconnect the connector [2]).

3) Free the harness from the clamp (in the case of the size sensor 1, the 2 clamps [3]; in the case of the size sensor 2, the 4 clamps [3] and [4]).



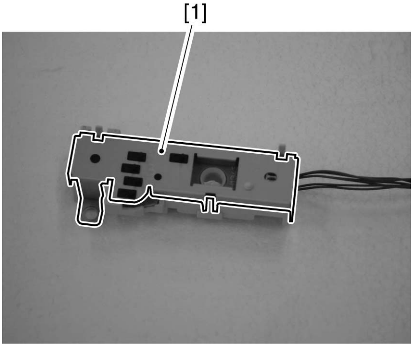
F-8-127

4) Remove the screw [1], and detach the cassette size sensor together with the PCB [2] (in the case of the size sensor 1, together with the size sensor 2; in the case of the size sensor 2, remove the sensor on its own).



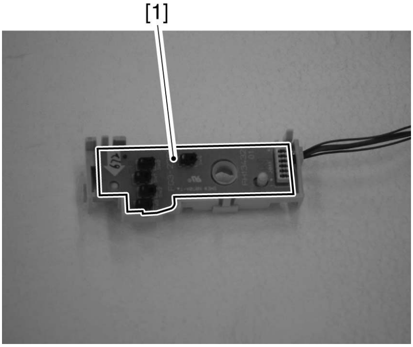
F-8-128

5) Detach the cover [1] from the PCB.



F-8-129

6) Detach the size sensor [1] from the PCB.

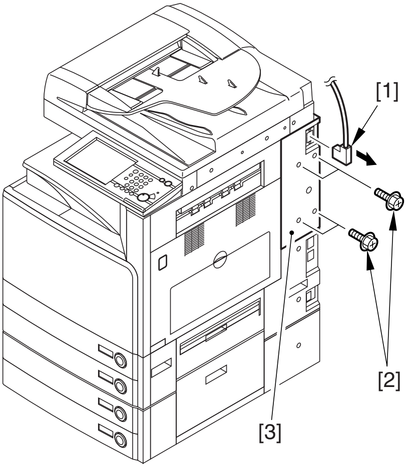


F-8-130

8.9.10 Cassette Retry Paper Sensor

8.9.10.1 Removing the Right Cover (upper rear)

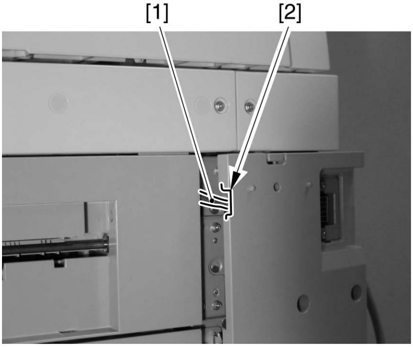
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-131

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

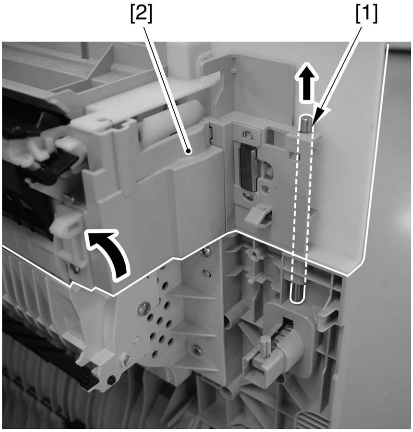


F-8-132

8.9.10.2 Removing the Right Door

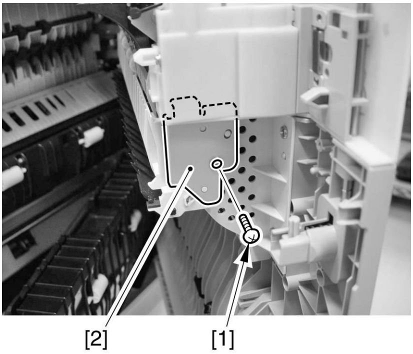
iR C3100

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-133

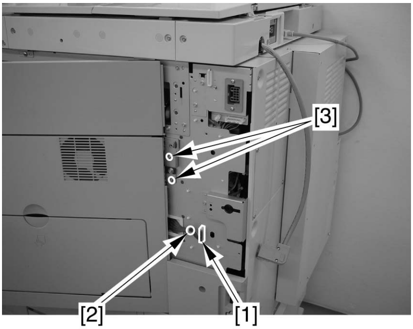
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-134

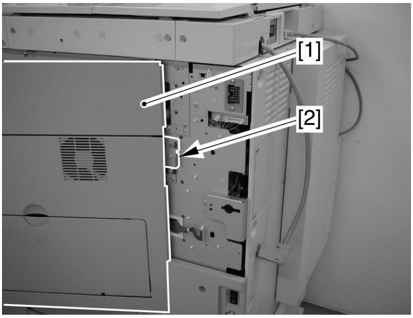
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-135

6) Detach the right door [1] together with the hinge [2].

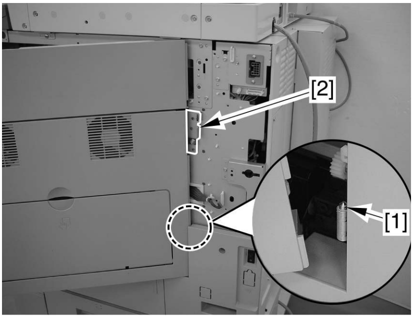


F-8-136

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

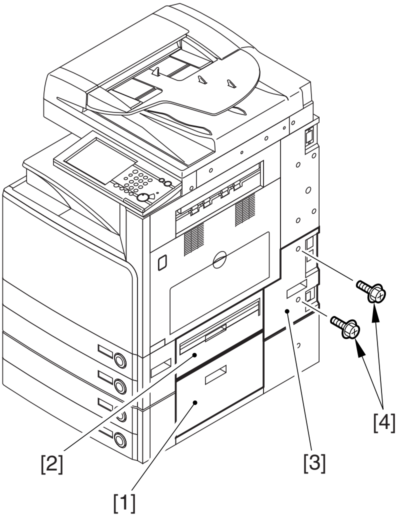


F-8-137

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.9.10.3 Removing the Right Cover (lower rear)

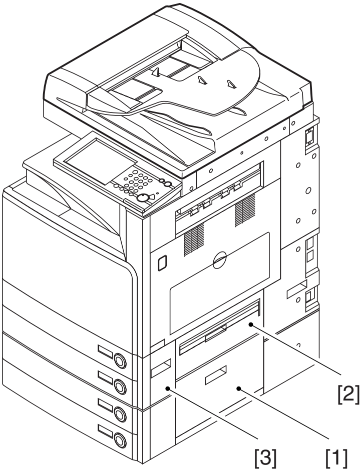
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-138

8.9.10.4 Removing the Right Cover (lower front)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].

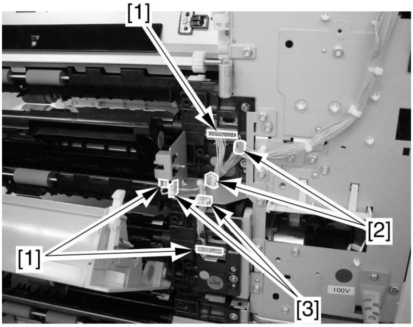


F-8-139

8.9.10.5 Removing the Pickup Assembly 1

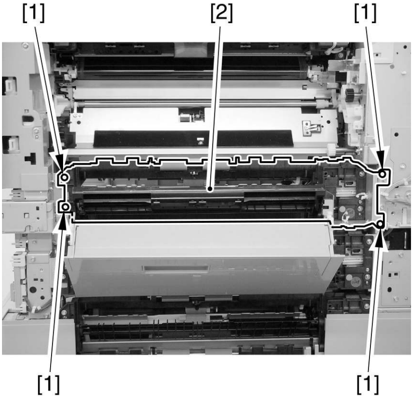
1) Slide out the cassette 1/2.

2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-140

3) Remove the 4 screws [1], and take out the pickup unit 1 [2].

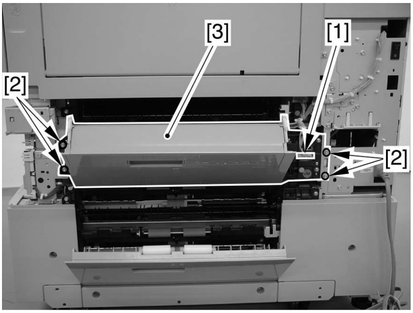


F-8-141

8.9.10.6 Removing the Pickup Assembly 2

1) Slide out the cassette 1/2.

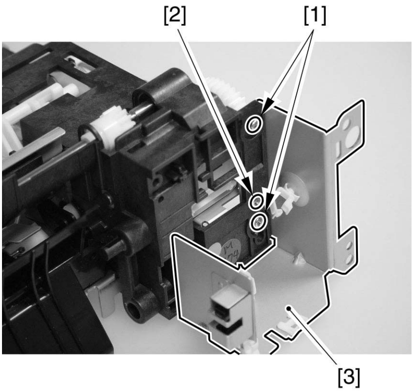
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-142

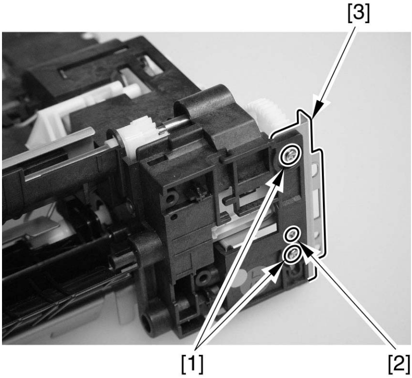
8.9.10.7 Removing the Sensor Base

1) Remove the 2 TP screws [1] and the binding screw [2] from the rear of the pickup assembly, and detach the bracket [3].



F-8-143

Pickup Unit 1

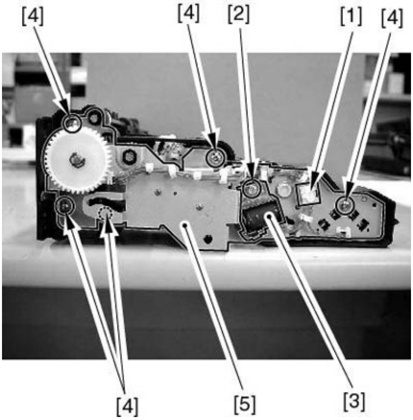


F-8-144

Pickup Unit 2

2) Disconnect the connector [1], and remove the screw; then, detach the cassette pickup solenoid [3].

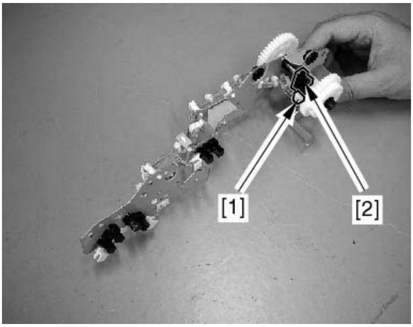
3) Remove the bushing and the 5 screws [4]; then, detach the sensor base [5].



F-8-145

8.9.10.8 Removing the Cassette Retry Paper Sensor

1) Disconnect the connector [1], and detach the cassette retry paper sensor [2].

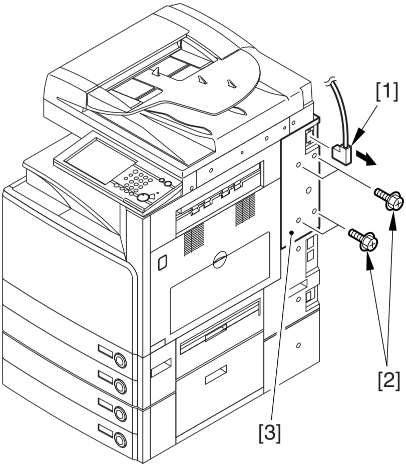


F-8-146

8.9.11 Cassette Paper Sensor

8.9.11.1 Removing the Right Cover (upper rear)

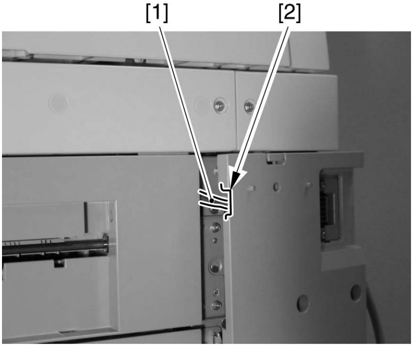
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-147

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

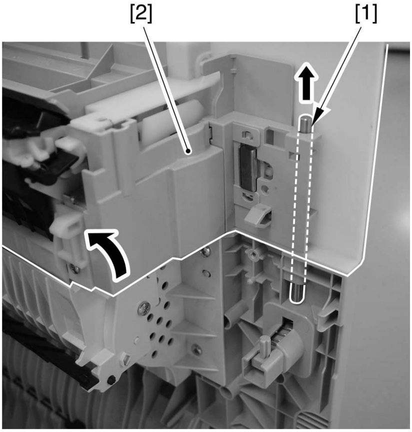
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-148

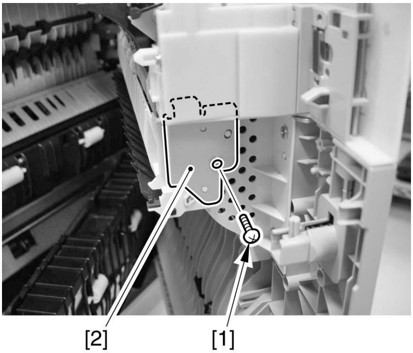
8.9.11.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-149

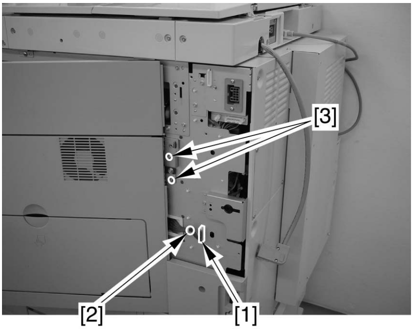
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-150

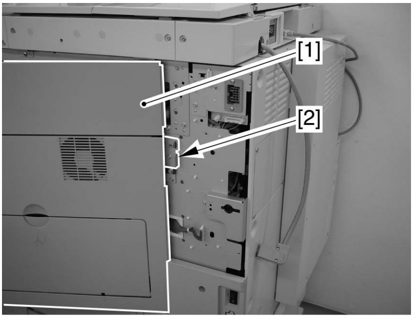
4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-8-151

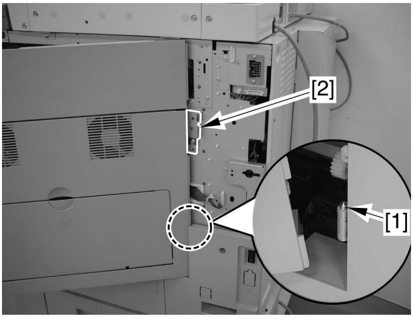
6) Detach the right door [1] together with the hinge [2].



F-8-152

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

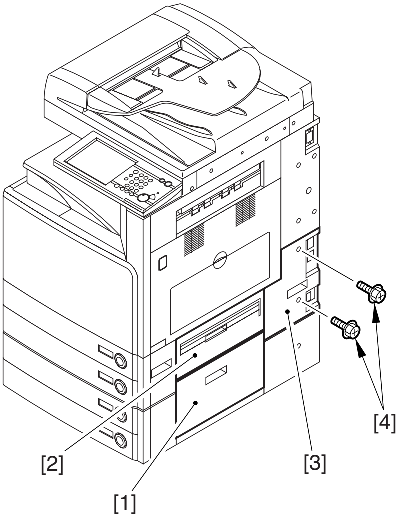


F-8-153

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.9.11.3 Removing the Right Cover (lower rear)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



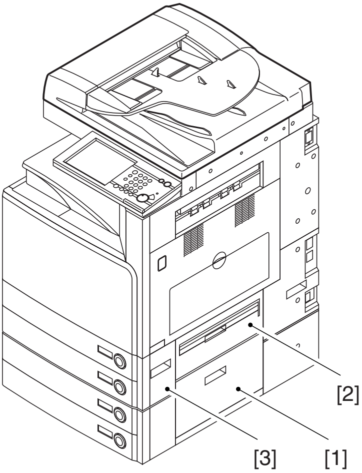
F-8-154

8.9.11.4 Removing the Right Cover (lower front)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower front) [3].

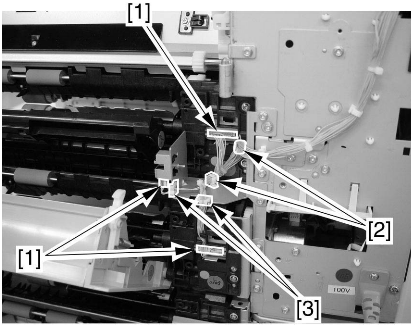


F-8-155

8.9.11.5 Removing the Pickup Assembly 1

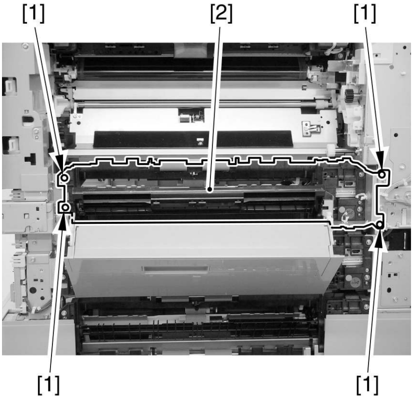
1) Slide out the cassette 1/2.

2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-156

3) Remove the 4 screws [1], and take out the pickup unit 1 [2].

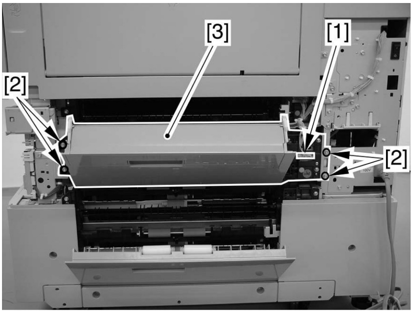


F-8-157

8.9.11.6 Removing the Pickup Assembly 2

1) Slide out the cassette 1/2.

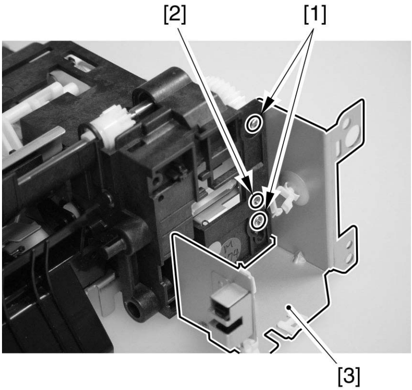
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-158

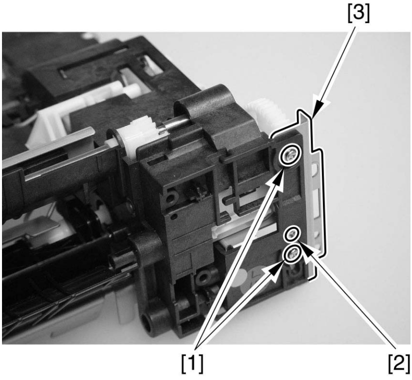
8.9.11.7 Removing the Sensor Base

1) Remove the 2 TP screws [1] and the binding screw [2] from the rear of the pickup assembly, and detach the bracket [3].



F-8-159

Pickup Unit 1

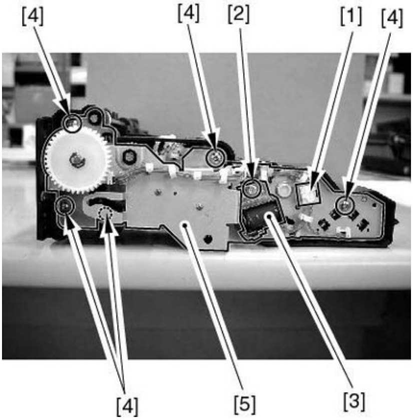


F-8-160

Pickup Unit 2

2) Disconnect the connector [1], and remove the screw; then, detach the cassette pickup solenoid [3].

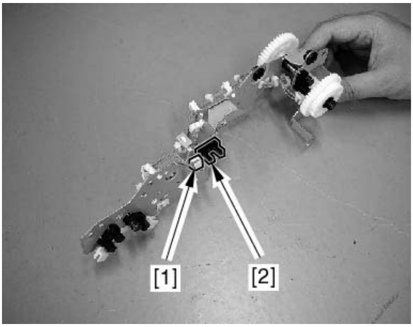
3) Remove the bushing and the 5 screws [4]; then, detach the sensor base [5].



F-8-161

8.9.11.8 Removing the Cassette Paper Sensor

1) Disconnect the connector [1], and detach the cassette paper sensor [2].



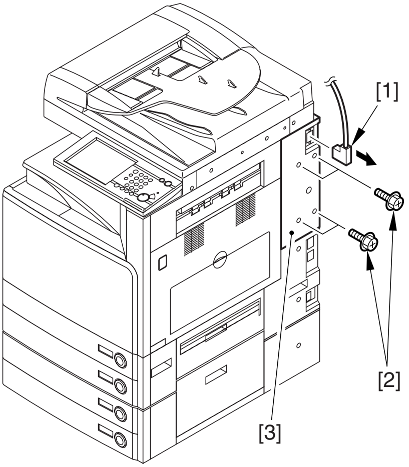
F-8-162

8.9.12 Cassette Paper Level Sensor (A/B)

8.9.12.1 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

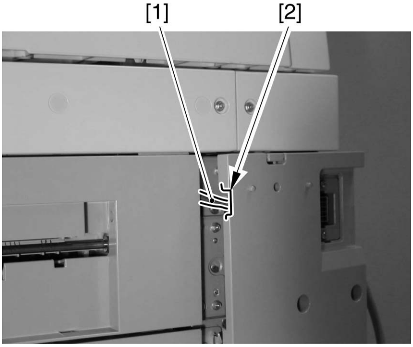
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-163

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

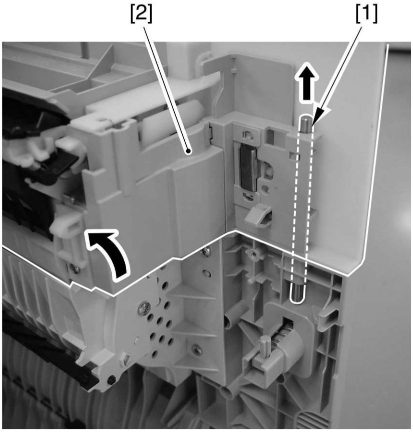
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-164

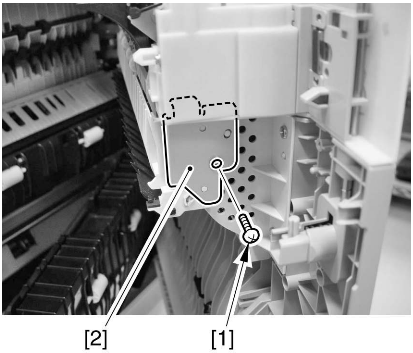
8.9.12.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-165

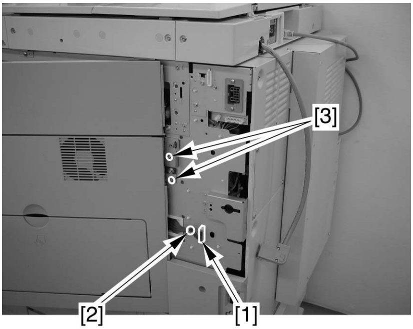
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-166

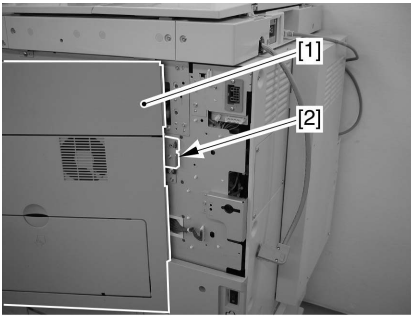
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-167

6) Detach the right door [1] together with the hinge [2].

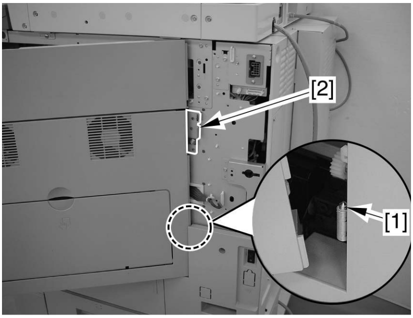


F-8-168

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

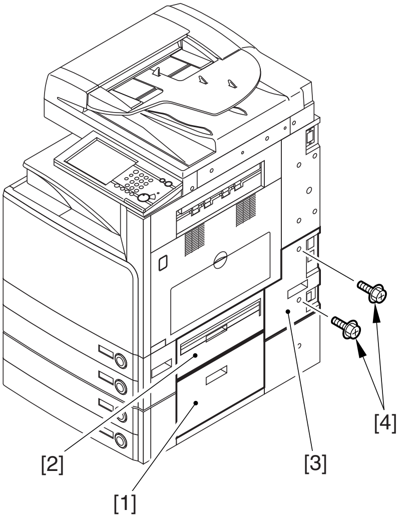


F-8-169

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.9.12.3 Removing the Right Cover (lower rear)

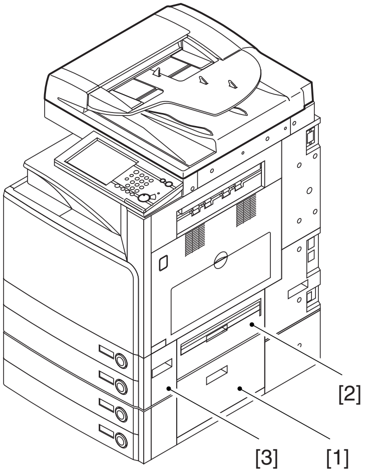
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-170

8.9.12.4 Removing the Right Cover (lower front)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].

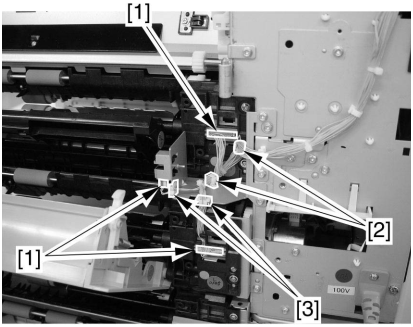


F-8-171

8.9.12.5 Removing the Pickup Assembly 1

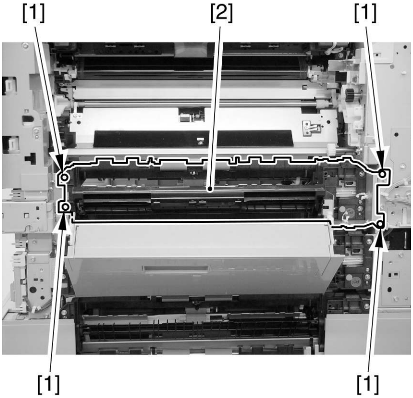
1) Slide out the cassette 1/2.

2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-172

3) Remove the 4 screws [1], and take out the pickup unit 1 [2].

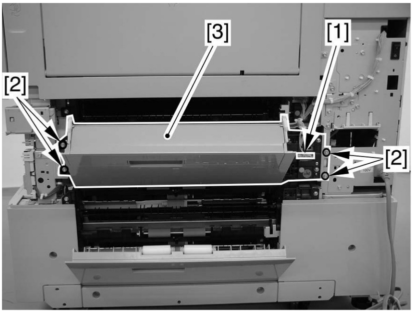


F-8-173

8.9.12.6 Removing the Pickup Assembly 2

1) Slide out the cassette 1/2.

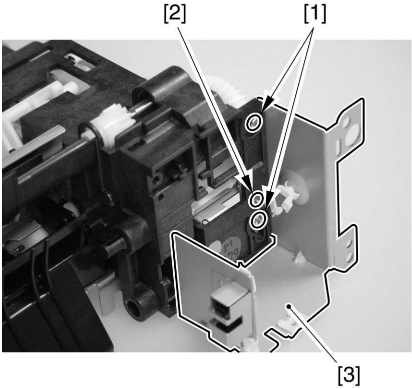
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-174

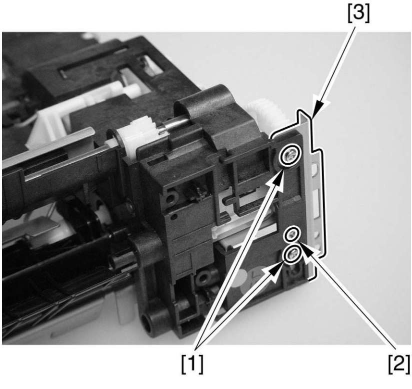
8.9.12.7 Removing the Sensor Base

1) Remove the 2 TP screws [1] and the binding screw [2] from the rear of the pickup assembly, and detach the bracket [3].



F-8-175

Pickup Unit 1

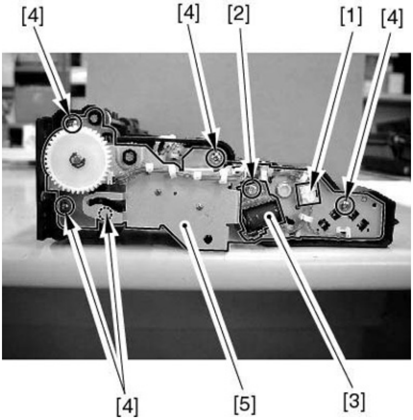


F-8-176

Pickup Unit 2

2) Disconnect the connector [1], and remove the screw; then, detach the cassette pickup solenoid [3].

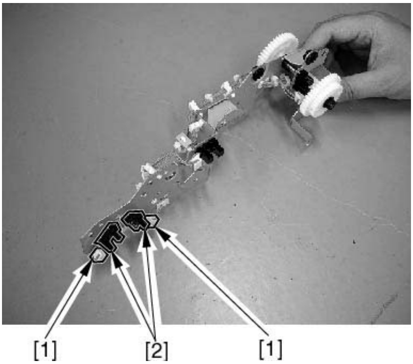
3) Remove the bushing and the 5 screws [4]; then, detach the sensor base [5].



F-8-177

8.9.12.8 Removing the Cassette Paper Level Sensor (A/B)

1) Disconnect the connector [1] (1 pc. each), and detach the cassette power level sensor (A/B) [2].

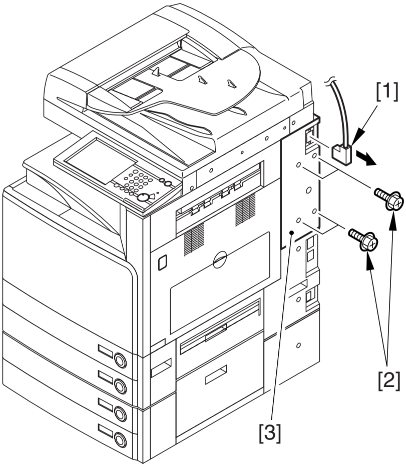


F-8-178

8.9.13 Slide Resistor

8.9.13.1 Removing the Right Cover (upper rear)

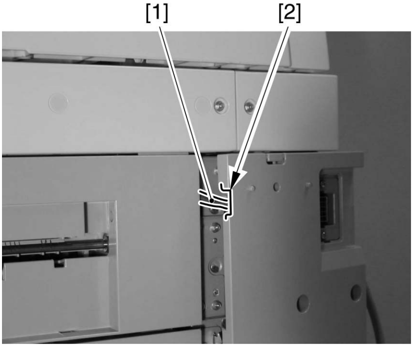
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-179

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

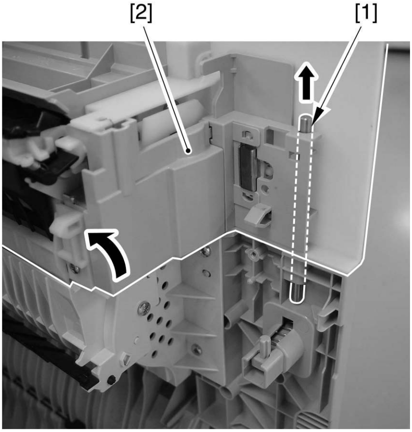


F-8-180

8.9.13.2 Removing the Right Door

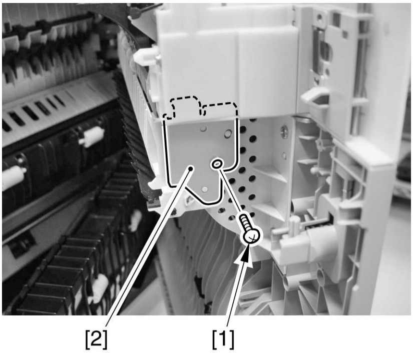
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-181

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.

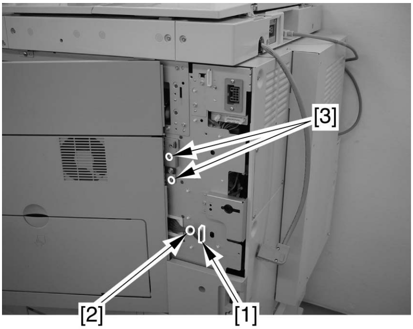


F-8-182

4) Disconnect the connector [1], and remove the clamp [2].

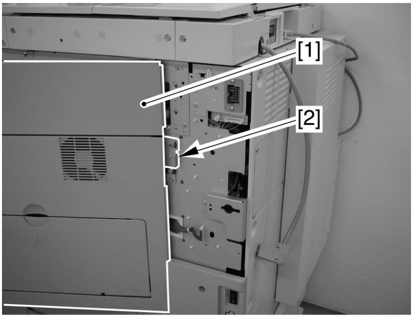
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-8-183

6) Detach the right door [1] together with the hinge [2].

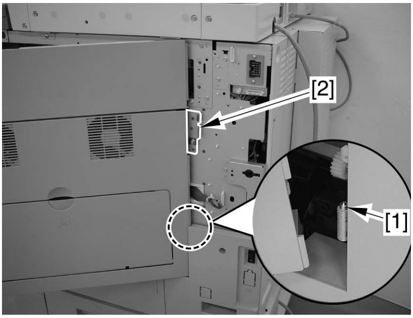


F-8-184

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

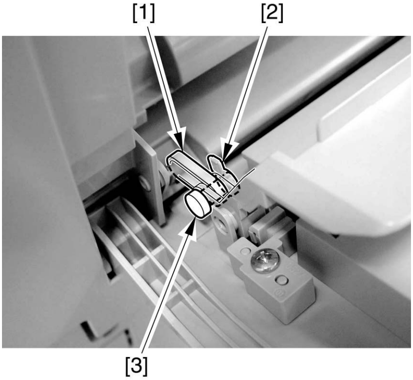


F-8-185

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

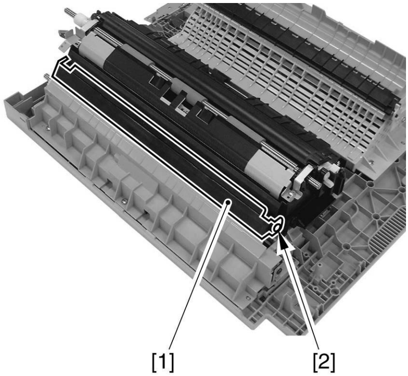
8.9.13.3 Removing the Manual Feed Unit

1) Remove the manual upper guide link [1] (plastic E-ring [2] and boss [3]).



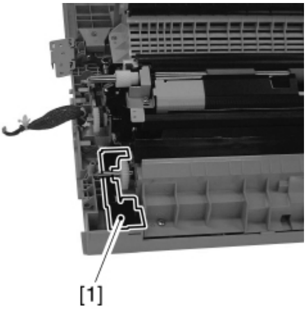
F-8-186

2) Remove the screw [2], and detach the manual feed guide [1].



F-8-187

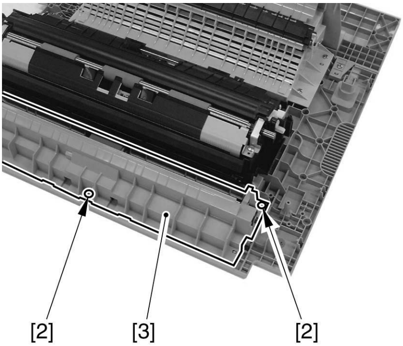
3) Remove the connector cover [1] (snap-on).



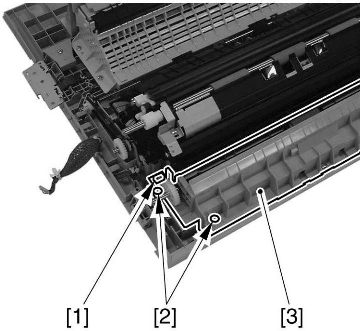
F-8-188

4) Disconnect the connector [1].

5) Remove the 4 screws [2], and detach the manual feed unit [3].



F-8-189

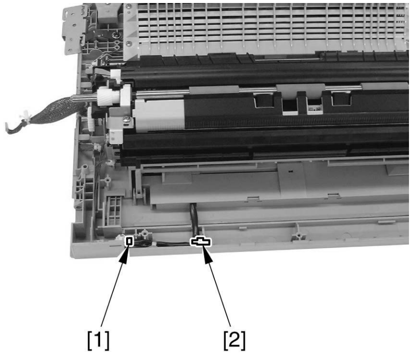


F-8-190

8.9.13.4 Removing Manual Feed Tray Unit

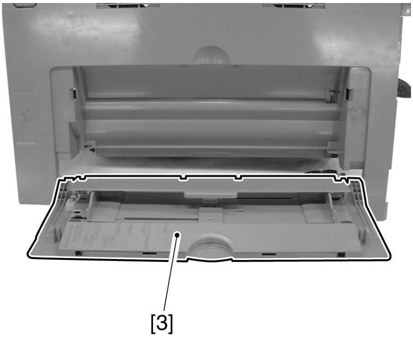
1) Disconnect the connector [1].

2) Remove the tie-wrap [2].



F-8-191

3) Remove the manual feed tray unit [3].

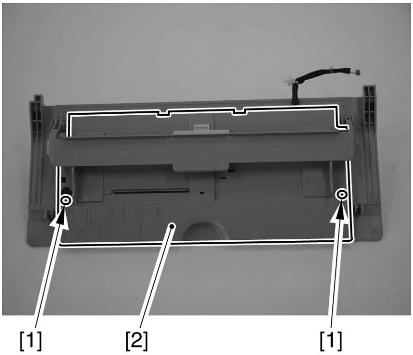


F-8-192

8.9.13.5 Removing the Slide Resistor

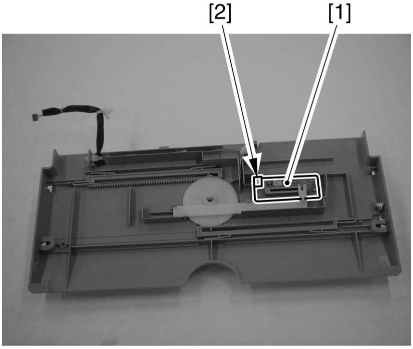
1) Remove 2 screws [1], and detach the manual feed tray upper cover [2].

⚠If possible, mark the position of the point of horizontal registration before removal.



F-8-193

2) Remove the slide resistor [1] (connector [2]).

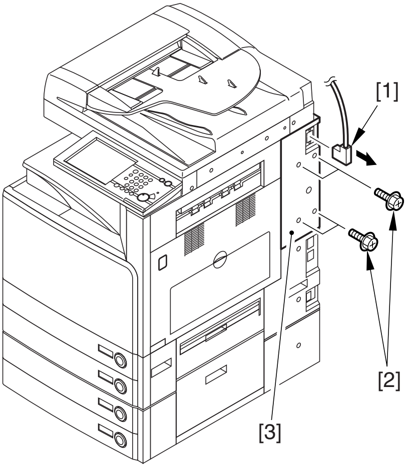


F-8-194

8.9.14 Cassette Pickup Solenoid

8.9.14.1 Removing the Right Cover (upper rear)

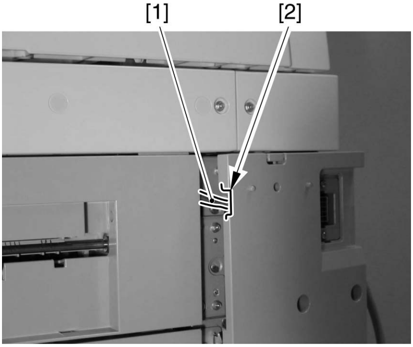
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-195

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

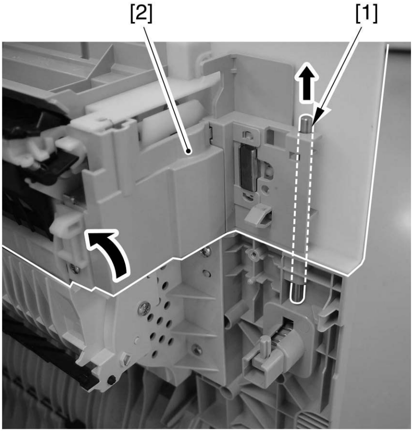
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-196

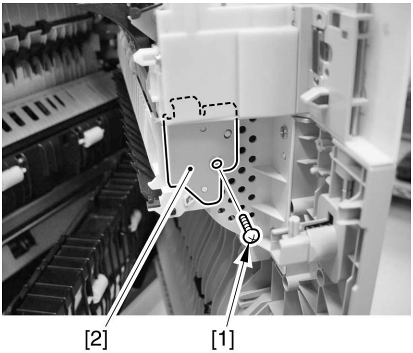
8.9.14.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-197

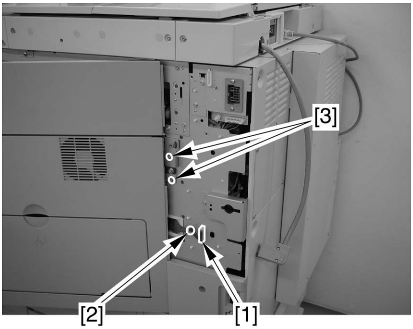
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-198

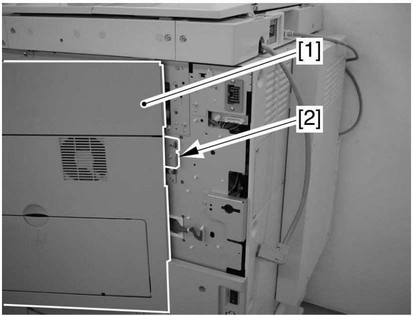
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-199

6) Detach the right door [1] together with the hinge [2].

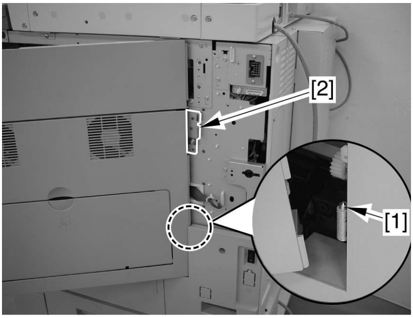


F-8-200

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

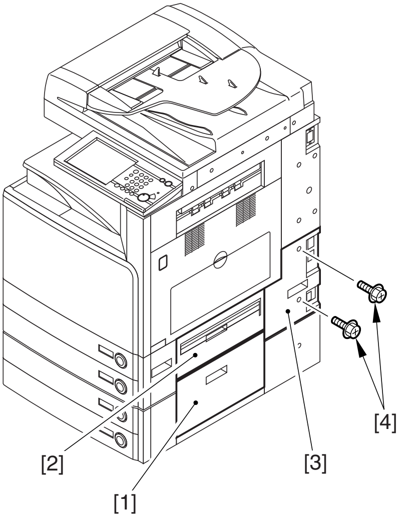


F-8-201

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.9.14.3 Removing the Right Cover (lower rear)

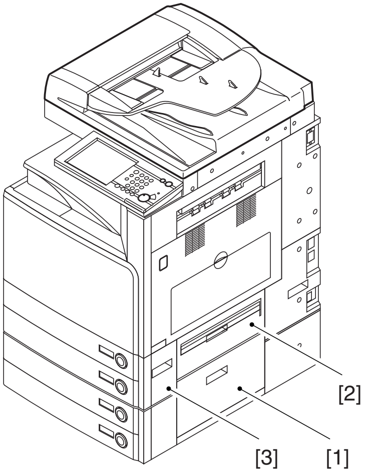
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-202

8.9.14.4 Removing the Right Cover (lower front)

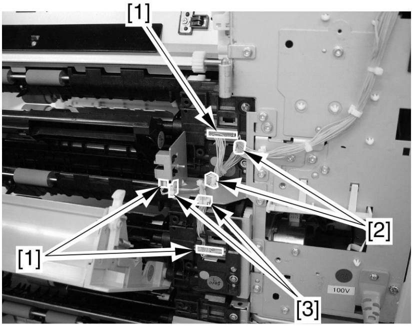
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].



F-8-203

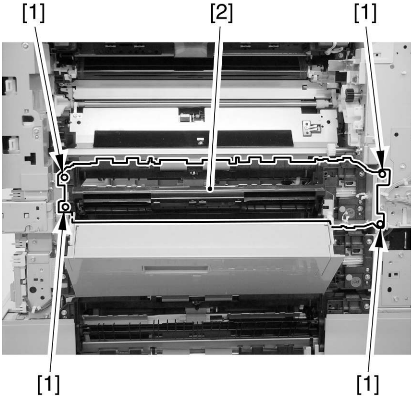
8.9.14.5 Removing the Pickup Assembly 1

1) Slide out the cassette 1/2.
2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-204

3) Remove the 4 screws [1], and take out the pickup unit 1 [2].

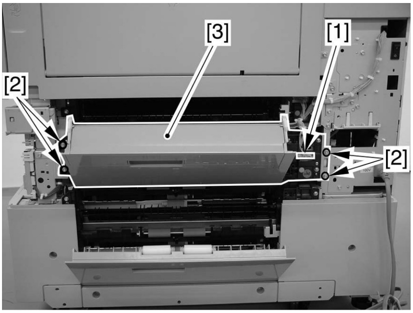


F-8-205

8.9.14.6 Removing the Pickup Assembly 2

iR C3100

1) Slide out the cassette 1/2.
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].

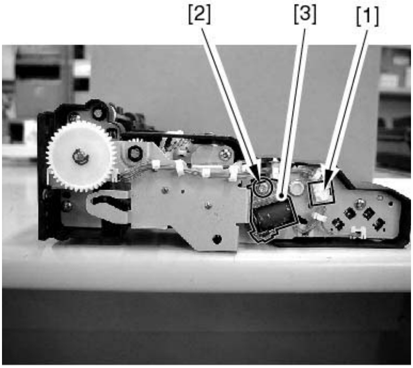


F-8-206

8.9.14.7 Removing the Cassette Pickup Solenoid

iR C3100

1) Disconnect the connector [1], and remove the screw [2]; then, detach the cassette pickup solenoid [3].

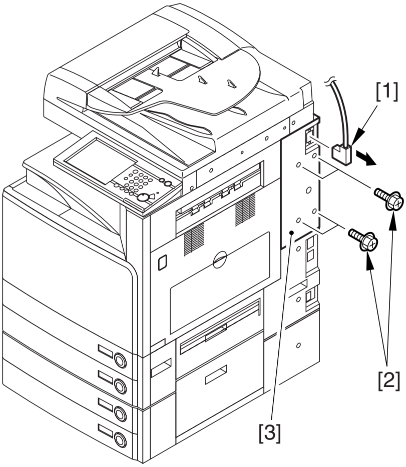


F-8-207

8.9.15 Cassette Size Sensor Relay PCB

8.9.15.1 Removing the Right Cover (upper rear)

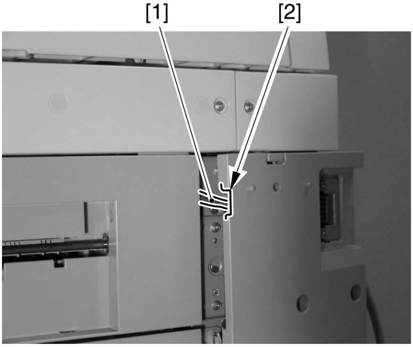
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-208

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

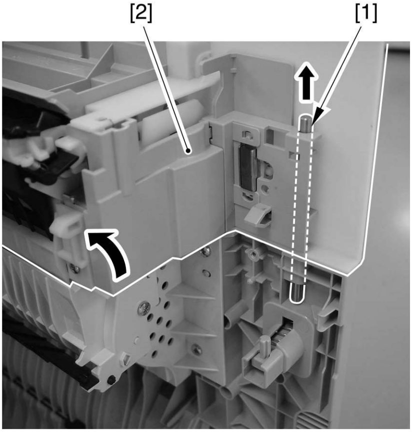


F-8-209

8.9.15.2 Removing the Right Door

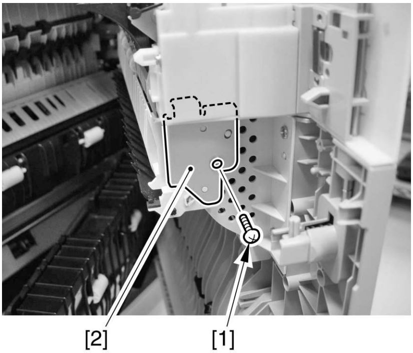
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-210

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.

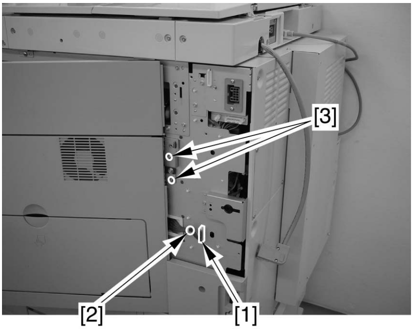


F-8-211

4) Disconnect the connector [1], and remove the clamp [2].

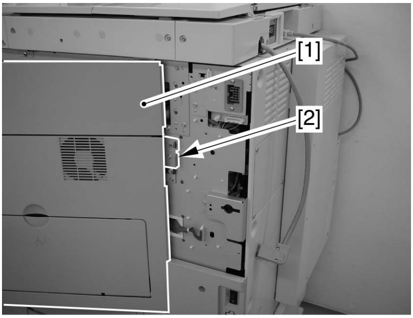
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-8-212

6) Detach the right door [1] together with the hinge [2].

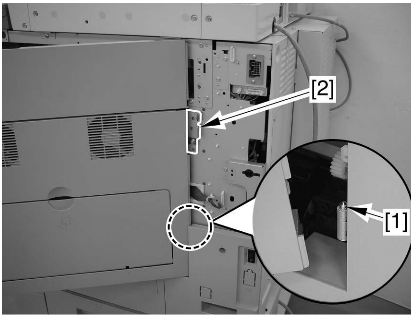


F-8-213

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



F-8-214

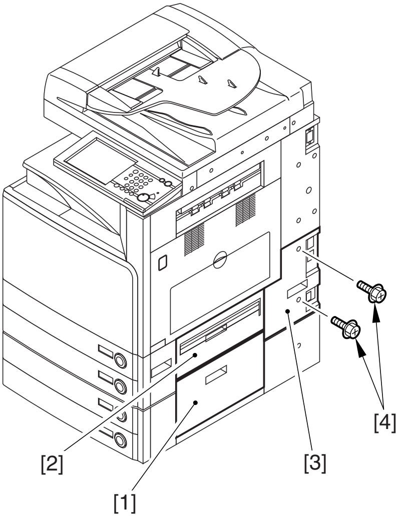
⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.9.15.3 Removing the Right Cover (lower rear)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower rear) [3].



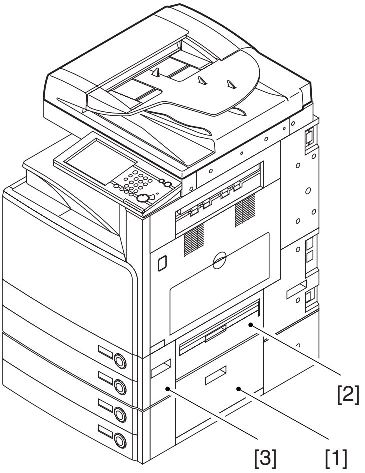
F-8-215

8.9.15.4 Removing the Right Cover (lower front)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower front) [3].

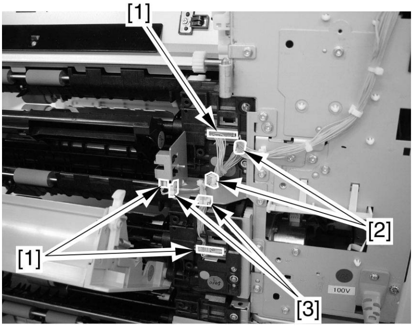


F-8-216

8.9.15.5 Removing the Pickup Assembly 1

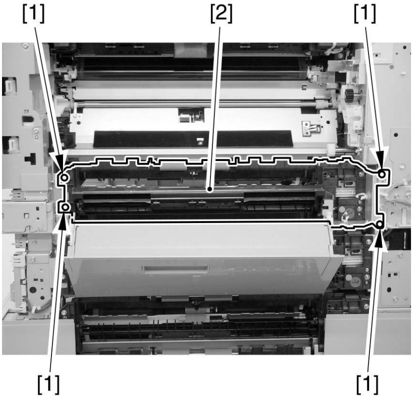
1) Slide out the cassette 1/2.

2) Disconnect that 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-217

3) Remove the 4 screws [1], and take out the pickup unit 1 [2].

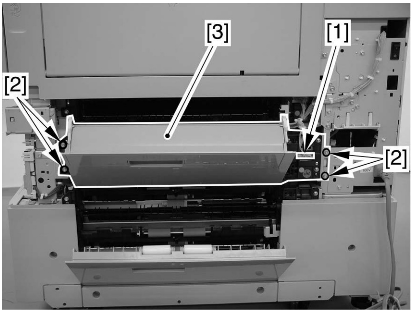


F-8-218

8.9.15.6 Removing the Pickup Assembly 2

1) Slide out the cassette 1/2.

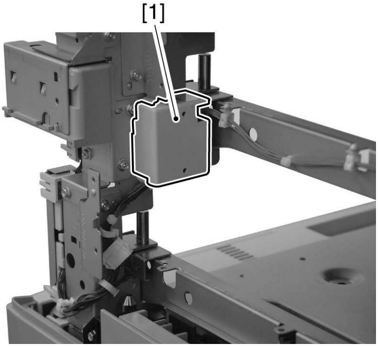
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-219

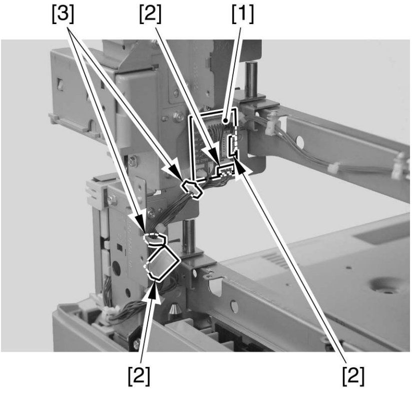
8.9.15.7 Removing the Cassette Size Sensor Relay PCB

1) Remove the PCB cover [1] (snap-on).



F-8-220

2) Remove the cassette size sensor relay PCB [2] (3 connectors [2], 2 clamps [3]).

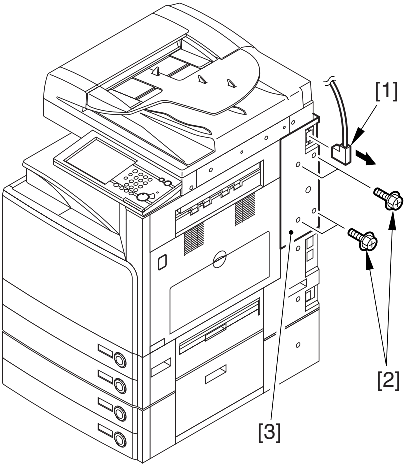


F-8-221

8.9.16 Manual Feed Pickup Clutch

8.9.16.1 Removing the Right Cover (upper rear)

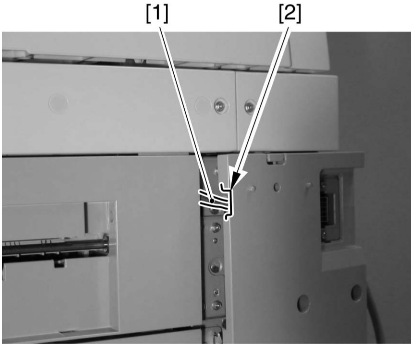
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-222

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

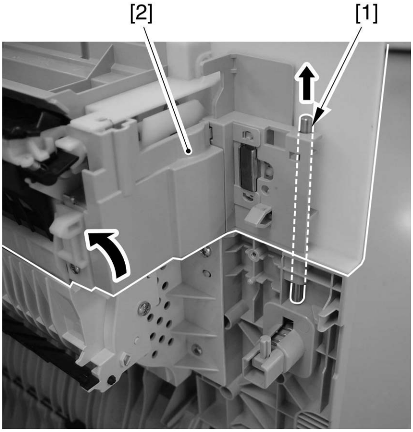
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-223

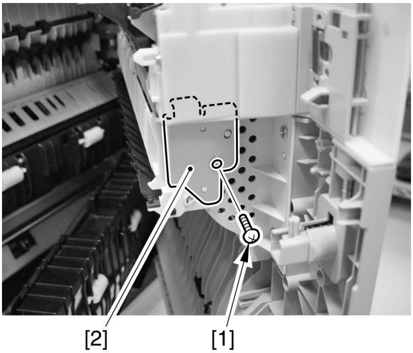
8.9.16.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-224

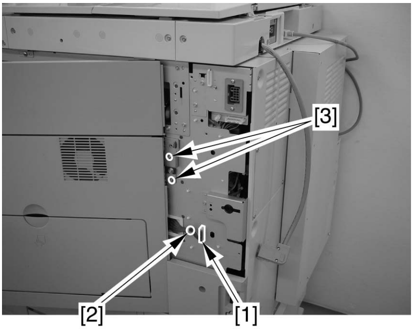
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-225

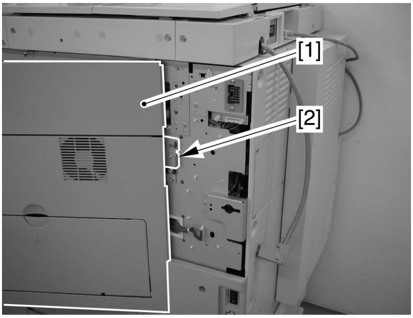
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-226

6) Detach the right door [1] together with the hinge [2].

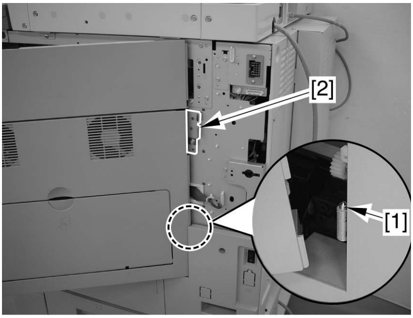


F-8-227

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

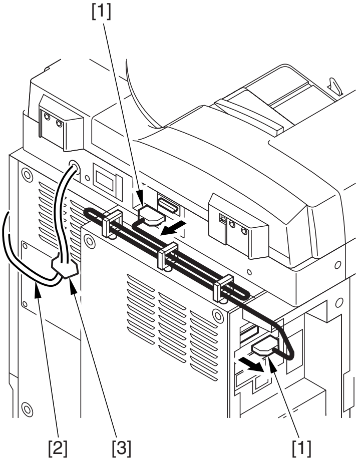


F-8-228

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

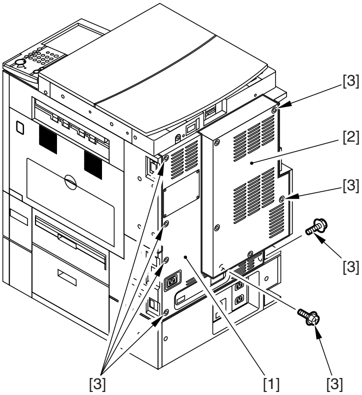
8.9.16.3 Removing the Rear Cover

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-229

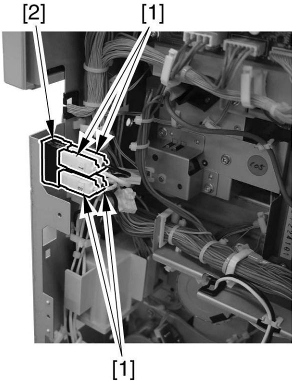
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-8-230

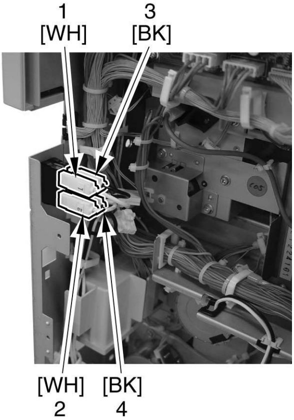
8.9.16.4 Removing the Main Power Switch

1) Remove the 4 fastons [1], and detach the main power switch [2] (snap-on).



F-8-231

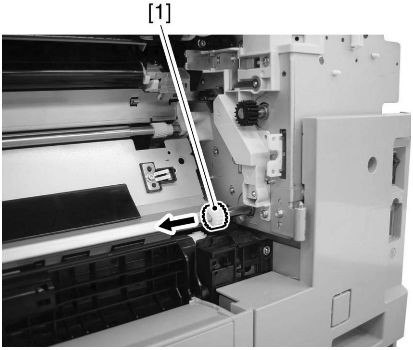
⚠When connecting the 4 fastons, be sure that the numbers in the following figure match those on the stickers attached to the fastons.



F-8-232

8.9.16.5 Removing the Manual Feed Pickup Clutch

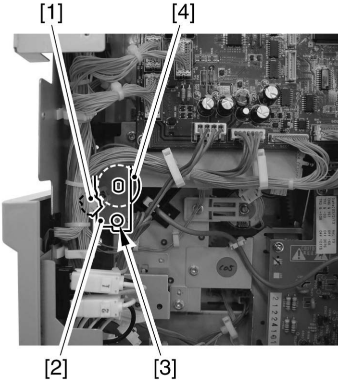
1) Remove the manual feed pickup gear [1].



F-8-233

2) Disconnect the connector (2P) [1]; at the same time, remove the 2 screws [3], and detach the stop [2].

3) Pull out the pickup manual feed clutch [4] to the front.

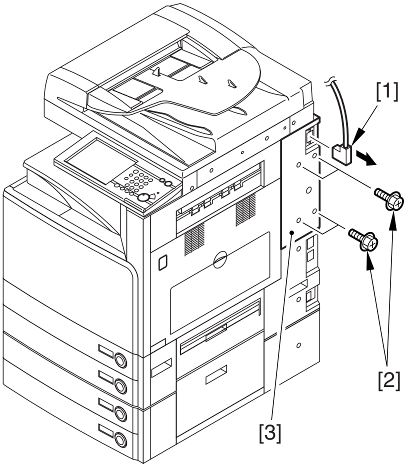


F-8-234

8.9.17 Manual Feed Tray Unit

8.9.17.1 Removing the Right Cover (upper rear)

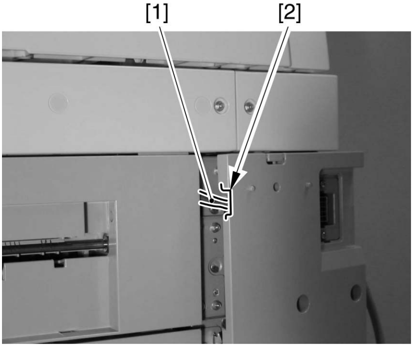
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-235

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

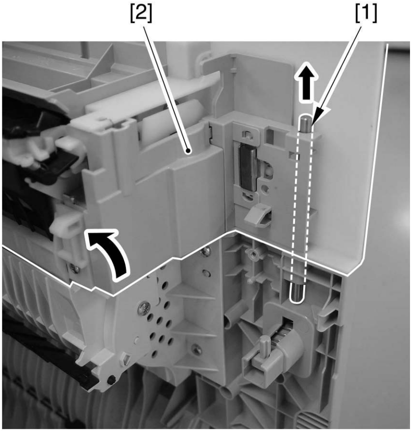


F-8-236

8.9.17.2 Removing the Right Door

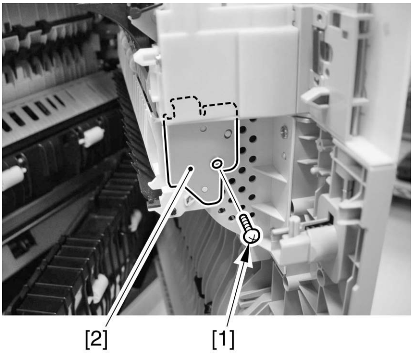
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-237

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.

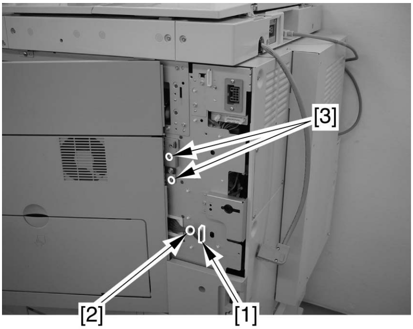


F-8-238

4) Disconnect the connector [1], and remove the clamp [2].

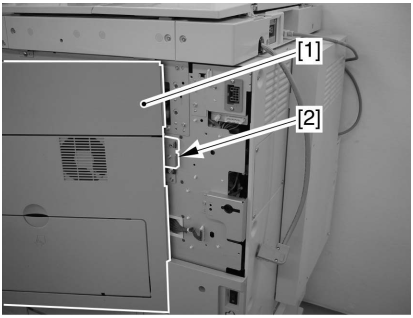
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-8-239

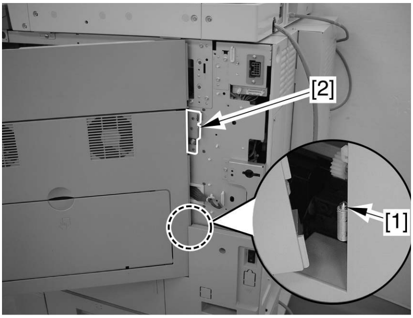
6) Detach the right door [1] together with the hinge [2].



F-8-240

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

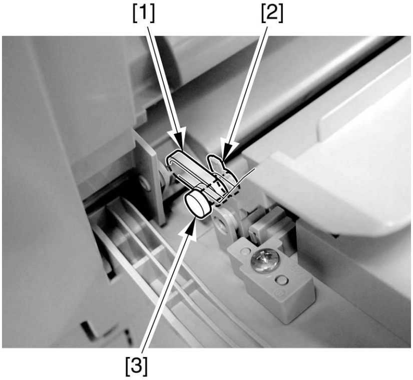


F-8-241

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

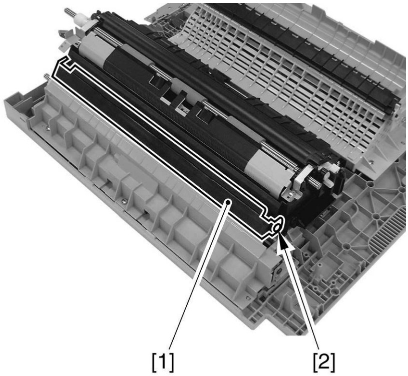
8.9.17.3 Removing the Manual Feed Unit

1) Remove the manual upper guide link [1] (plastic E-ring [2] and boss [3]).



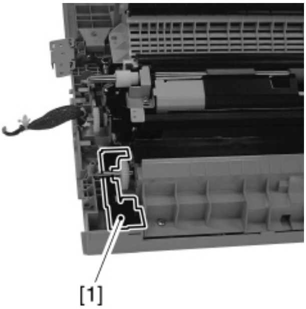
F-8-242

2) Remove the screw [2], and detach the manual feed guide [1].



F-8-243

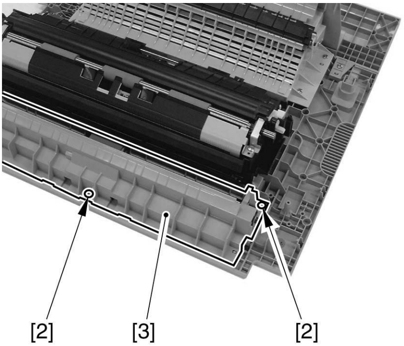
3) Remove the connector cover [1] (snap-on).



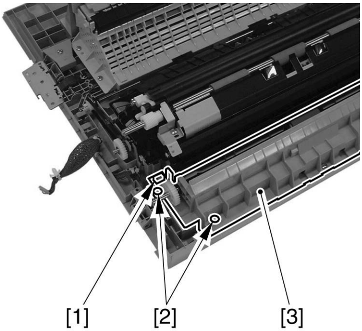
F-8-244

4) Disconnect the connector [1].

5) Remove the 4 screws [2], and detach the manual feed unit [3].



F-8-245

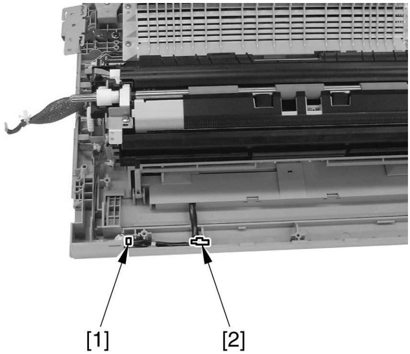


F-8-246

8.9.17.4 Removing Manual Feed Tray Unit

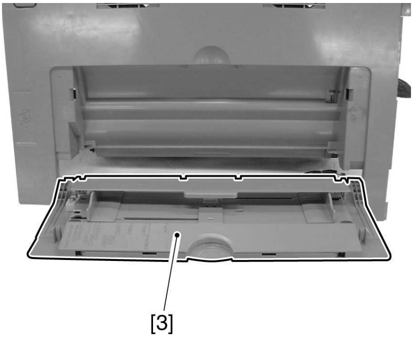
1) Disconnect the connector [1].

2) Remove the tie-wrap [2].



F-8-247

3) Remove the manual feed tray unit [3].



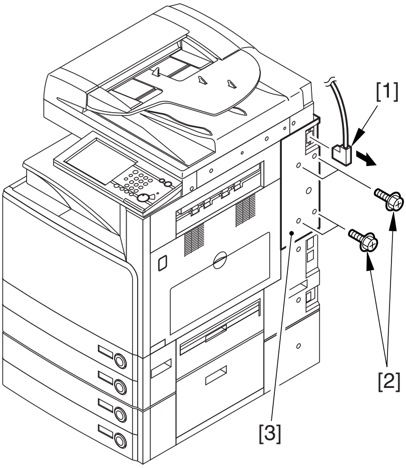
F-8-248

8.9.18 Manual Feed Unit

8.9.18.1 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

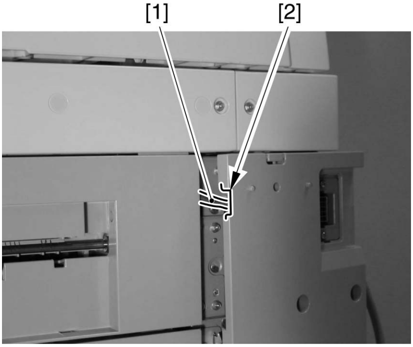
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-249

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

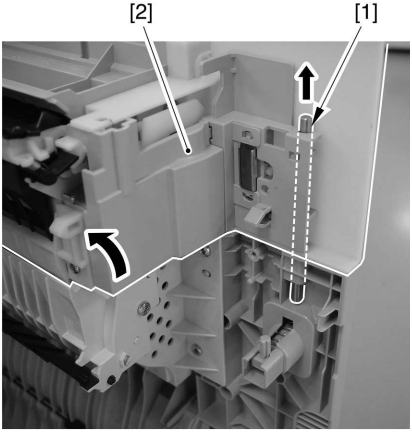


F-8-250

8.9.18.2 Removing the Right Door

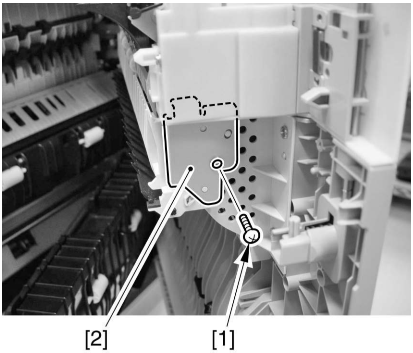
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-251

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.

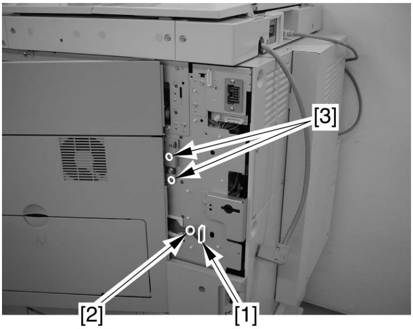


F-8-252

4) Disconnect the connector [1], and remove the clamp [2].

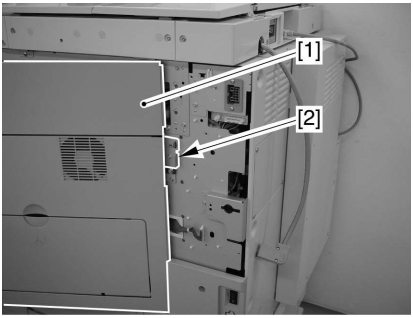
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-8-253

6) Detach the right door [1] together with the hinge [2].

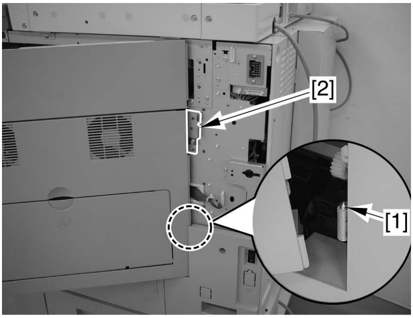


F-8-254

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

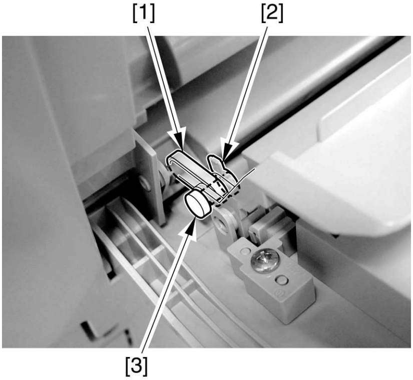


F-8-255

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

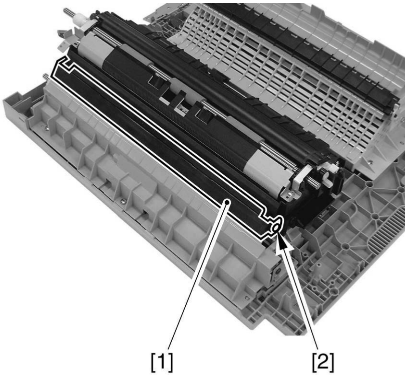
8.9.18.3 Removing the Manual Feed Unit

1) Remove the manual upper guide link [1] (plastic E-ring [2] and boss [3]).



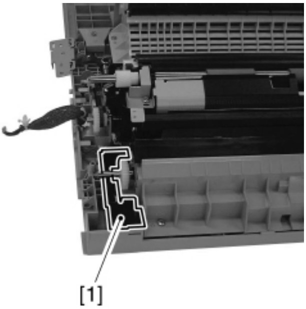
F-8-256

2) Remove the screw [2], and detach the manual feed guide [1].



F-8-257

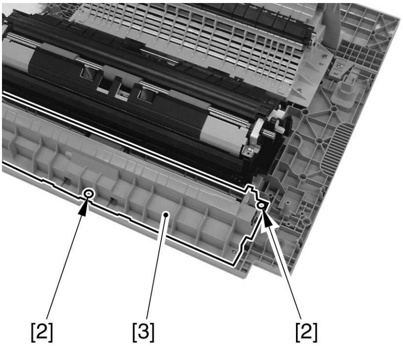
3) Remove the connector cover [1] (snap-on).



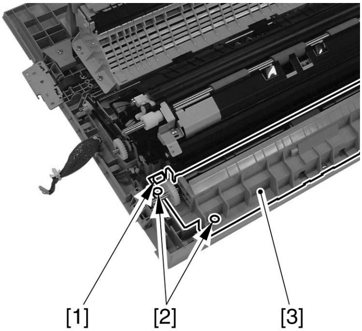
F-8-258

4) Disconnect the connector [1].

5) Remove the 4 screws [2], and detach the manual feed unit [3].



F-8-259



F-8-260

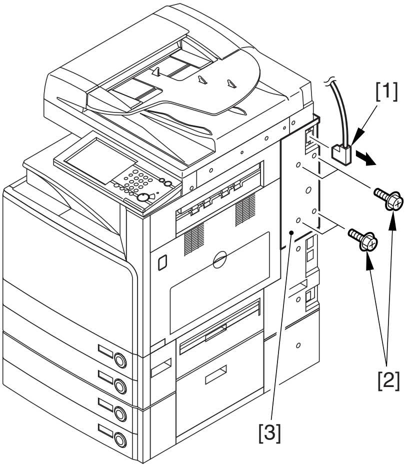
8.9.19 Manual Pickup Roller

8.9.19.1 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

2) Remove the 4 screws [2], and detach the

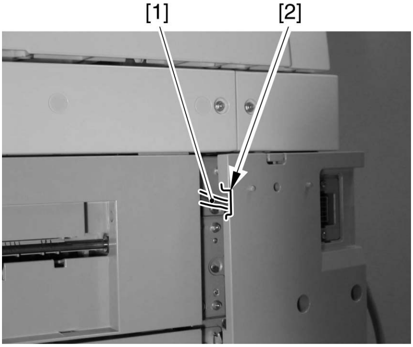
right cover (upper rear) [3].



F-8-261

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

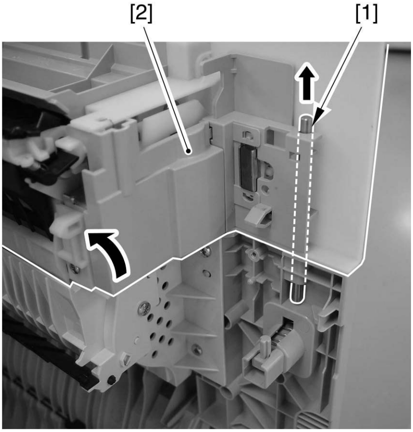


F-8-262

8.9.19.2 Removing the Right Door

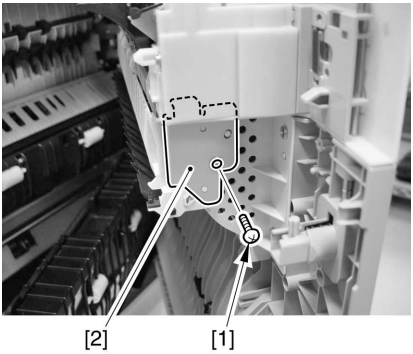
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-263

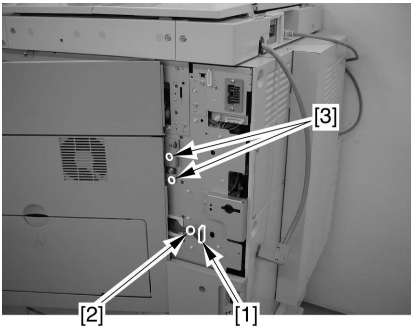
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-264

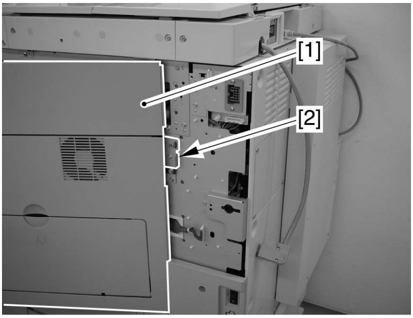
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-265

6) Detach the right door [1] together with the hinge [2].

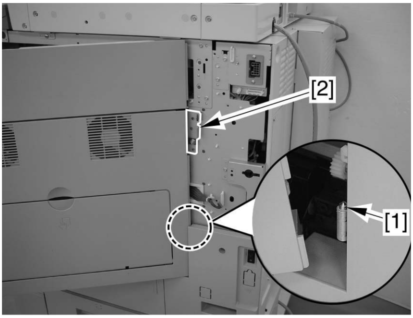


F-8-266

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

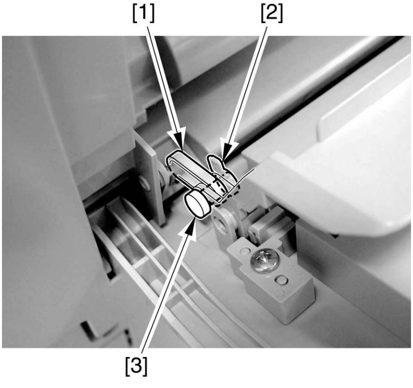


F-8-267

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

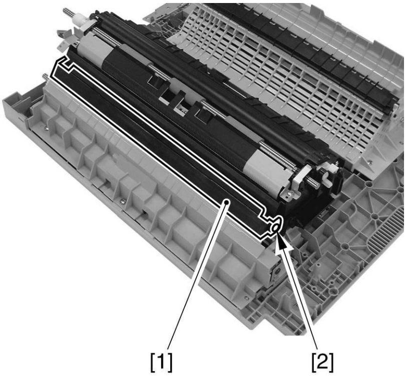
8.9.19.3 Removing the Manual Feed Unit

1) Remove the manual upper guide link [1] (plastic E-ring [2] and boss [3]).



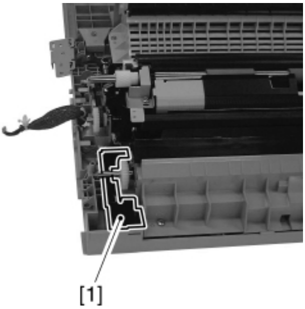
F-8-268

2) Remove the screw [2], and detach the manual feed guide [1].



F-8-269

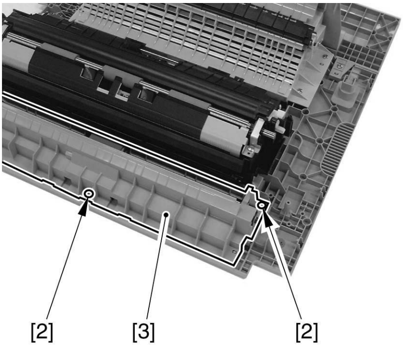
3) Remove the connector cover [1] (snap-on).



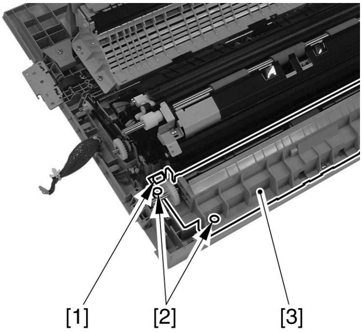
F-8-270

4) Disconnect the connector [1].

5) Remove the 4 screws [2], and detach the manual feed unit [3].



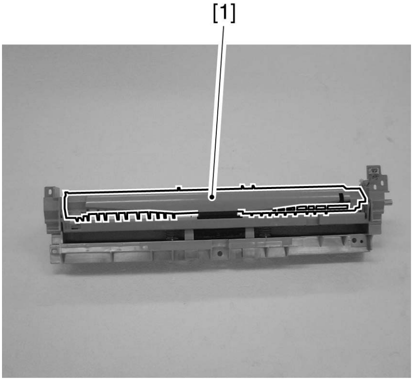
F-8-271



F-8-272

8.9.19.4 Removing the Pickup Roller

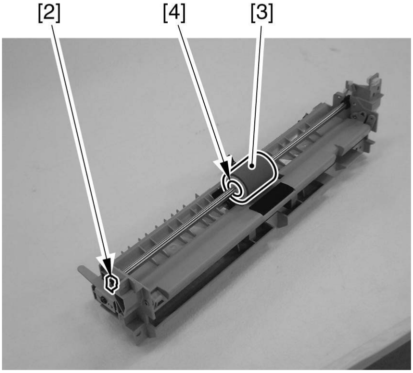
1) Remove the manual feed upper cover [1] (snap-on).



F-8-273

2) Remove the bush [2], and detach the manual feed pickup roller [3] together with the shaft.

3) Remove the plastic E-ring [4], and detach the manual feed pickup roller from shaft. Take care not to drop the parallel pin.

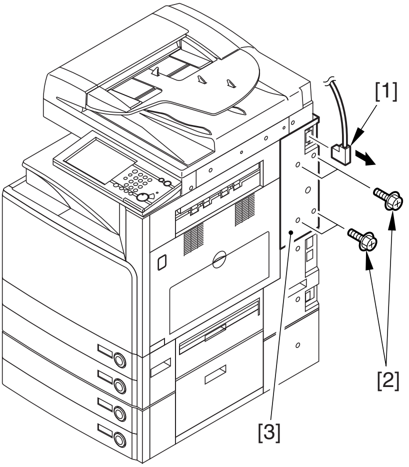


F-8-274

8.9.20 Manual Feed Separation Pad

8.9.20.1 Removing the Right Cover (upper rear)

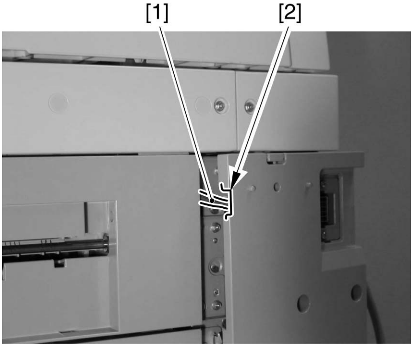
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-275

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

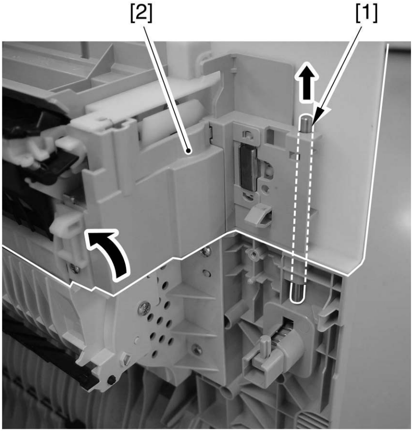
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-276

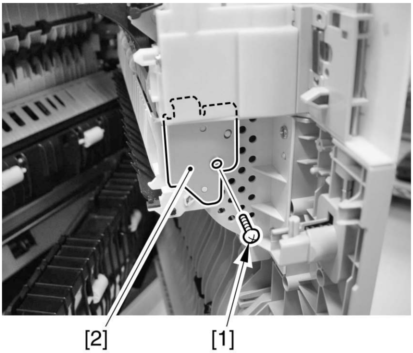
8.9.20.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-277

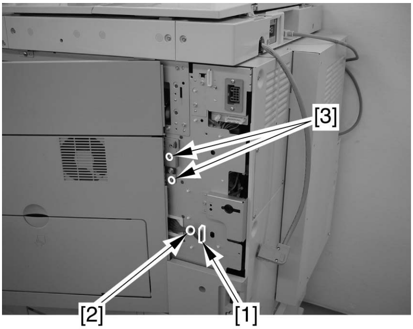
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-278

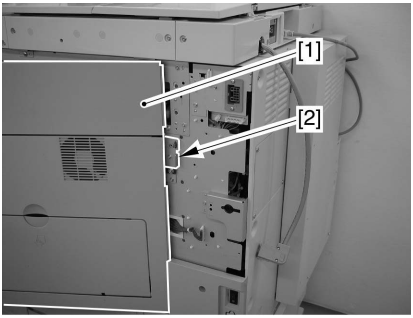
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-279

6) Detach the right door [1] together with the hinge [2].

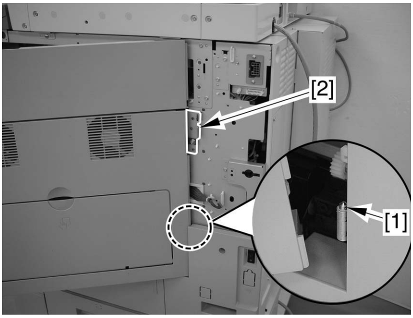


F-8-280

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

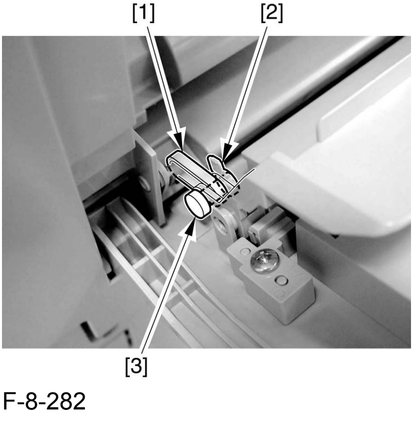


F-8-281

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

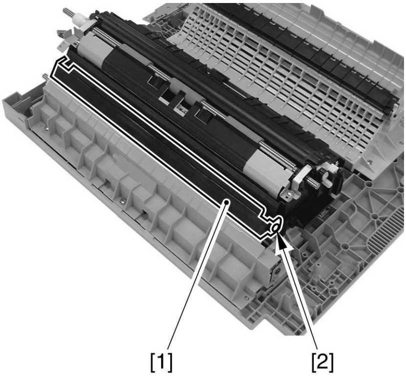
8.9.20.3 Removing the Manual Feed Unit

1) Remove the manual upper guide link [1] (plastic E-ring [2] and boss [3]).



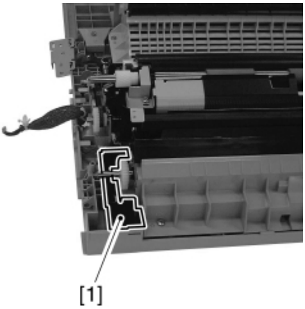
F-8-282

2) Remove the screw [2], and detach the manual feed guide [1].



F-8-283

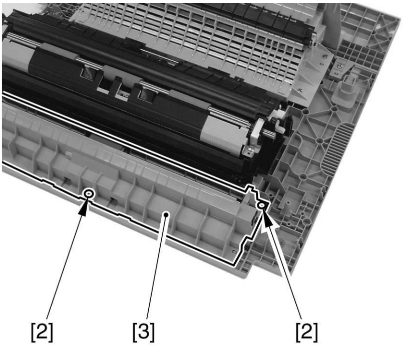
3) Remove the connector cover [1] (snap-on).



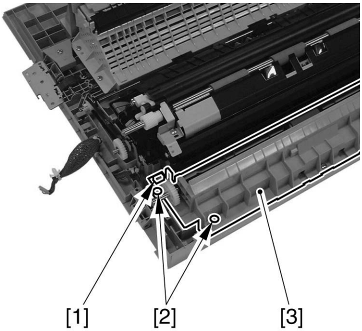
F-8-284

4) Disconnect the connector [1].

5) Remove the 4 screws [2], and detach the manual feed unit [3].



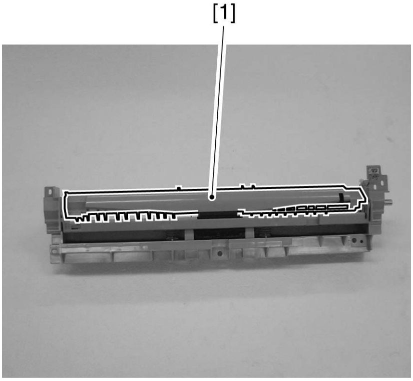
F-8-285



F-8-286

8.9.20.4 Removing the Pickup Roller

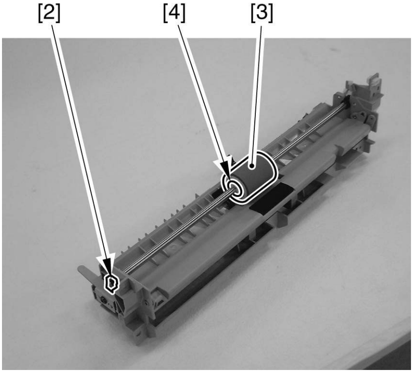
1) Remove the manual feed upper cover [1] (snap-on).



F-8-287

2) Remove the bush [2], and detach the manual feed pickup roller [3] together with the shaft.

3) Remove the plastic E-ring [4], and detach the manual feed pickup roller from shaft. Take care not to drop the parallel pin.

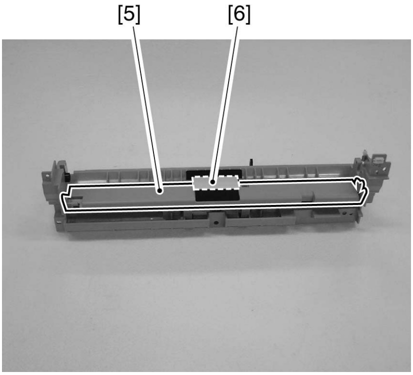


F-8-288

8.9.20.5 Removing the Manual Feed Separation Pad

1) Remove the holding plate [5].

2) Remove the separation pad [6].



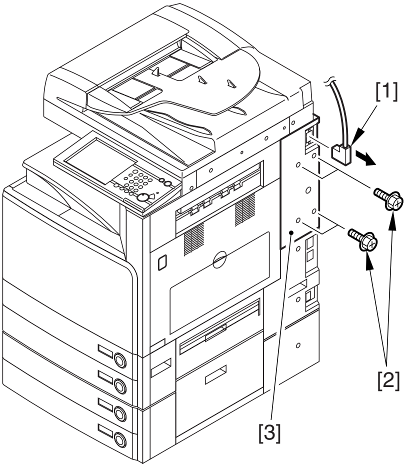
F-8-289

8.9.21 Transparency Sensor (Front/Rear)

8.9.21.1 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

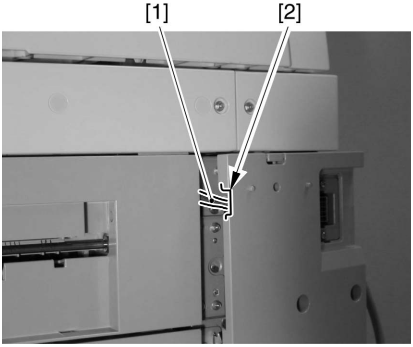
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-290

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

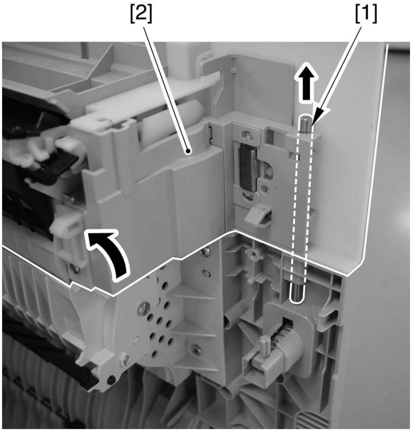
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-291

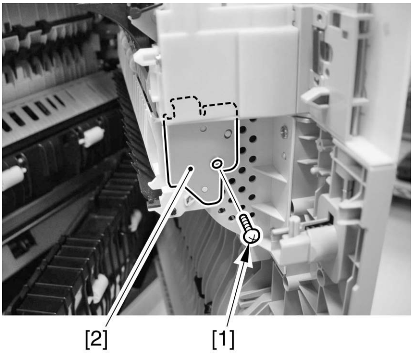
8.9.21.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-292

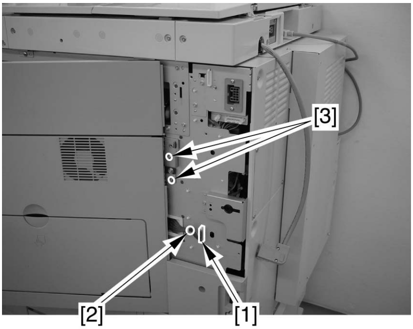
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-293

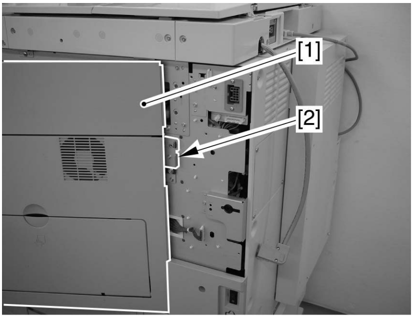
4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-8-294

6) Detach the right door [1] together with the hinge [2].

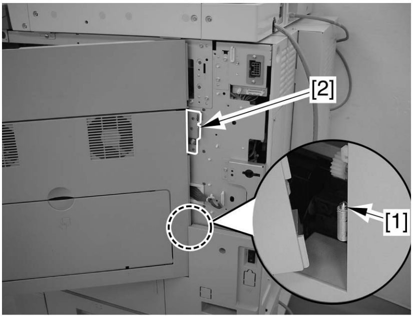


F-8-295

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



F-8-296

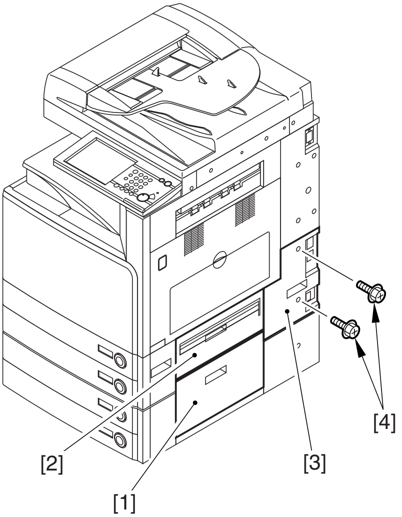
⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.9.21.3 Removing the Right Cover (lower rear)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower rear) [3].



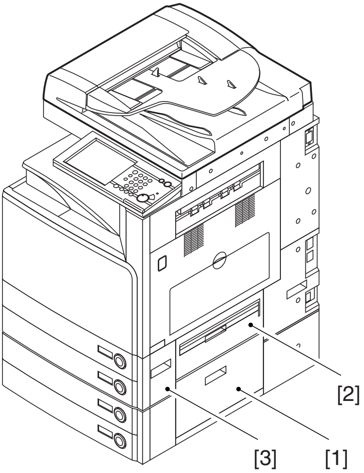
F-8-297

8.9.21.4 Removing the Right Cover (lower front)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower front) [3].

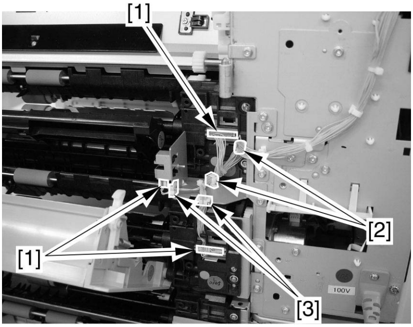


F-8-298

8.9.21.5 Removing the PIck-up Assembly 1

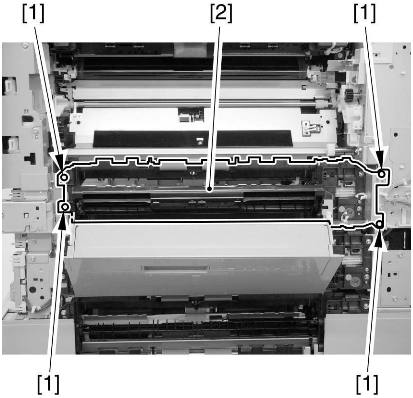
1) Slide out the cassette 1/2.

2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-299

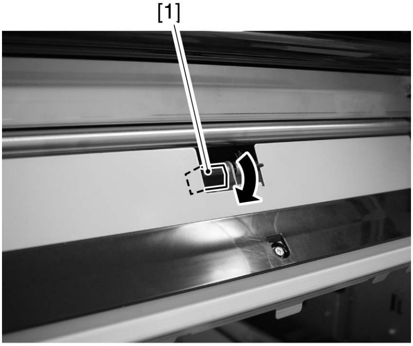
3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



F-8-300

8.9.21.6 Removing the Transparency Sensor

1) Put your hand from behind the pre-registration guide, and remove the transparency sensor [1] (snap-on and connector).



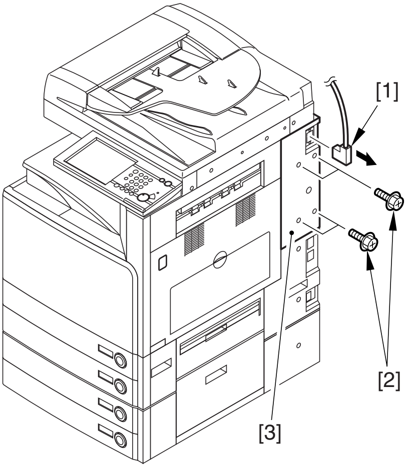
F-8-301

8.9.22 Registration Sensor

8.9.22.1 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

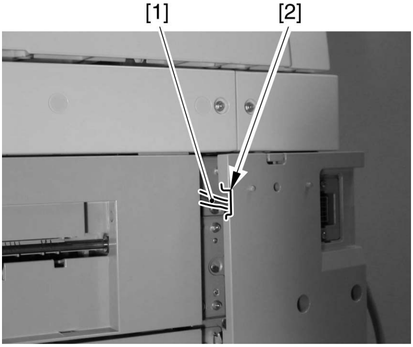
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-302

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

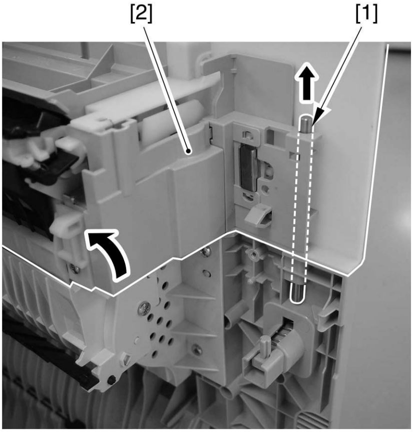
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-303

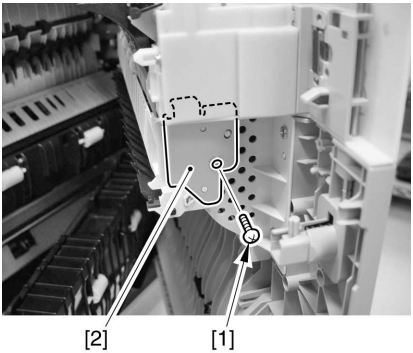
8.9.22.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-304

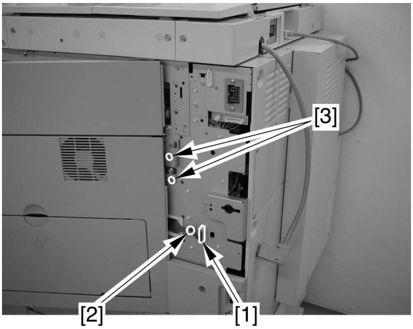
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-305

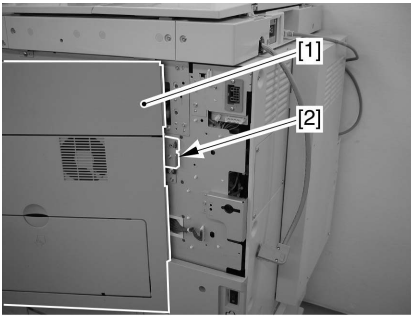
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-306

6) Detach the right door [1] together with the hinge [2].

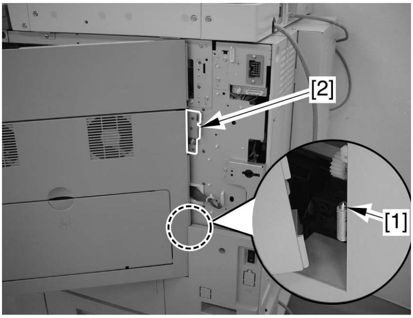


F-8-307

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

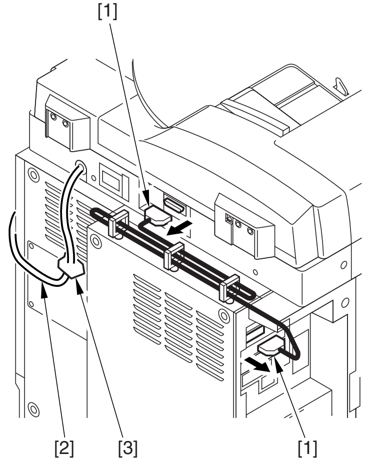


F-8-308

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

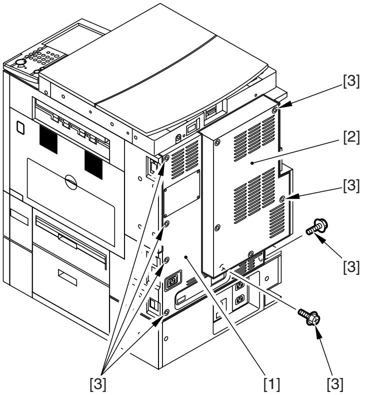
8.9.22.3 Removing the Rear Cover

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-309

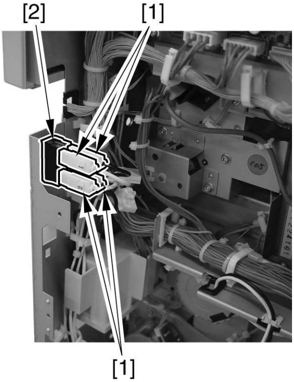
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-8-310

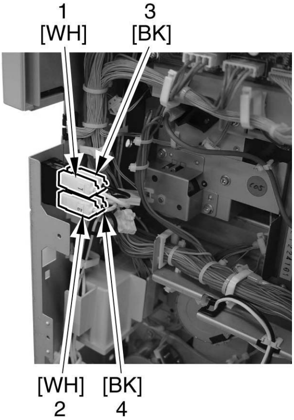
8.9.22.4 Removing the Main Power Switch

1) Remove the 4 fastons [1], and detach the main power switch [2] (snap-on).



F-8-311

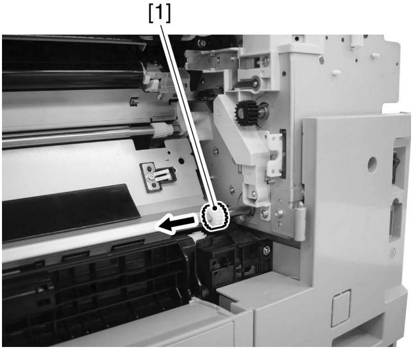
⚠When connecting the 4 fastons, be sure that the numbers in the following figure match those on the stickers attached to the fastons.



F-8-312

8.9.22.5 Removing the Manual Feed Pickup Clutch

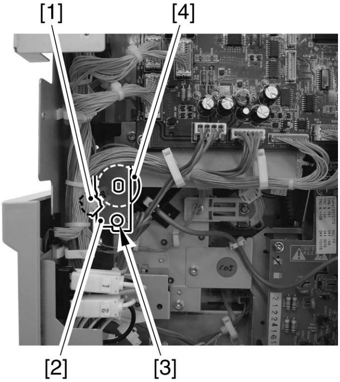
1) Remove the manual feed pickup gear [1].



F-8-313

2) Disconnect the connector (2P) [1]; at the same time, remove the 2 screws [3], and detach the stop [2].

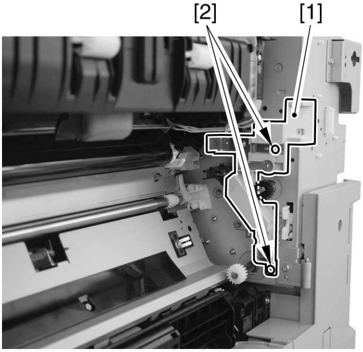
3) Pull out the pickup manual feed clutch [4] to the front.



F-8-314

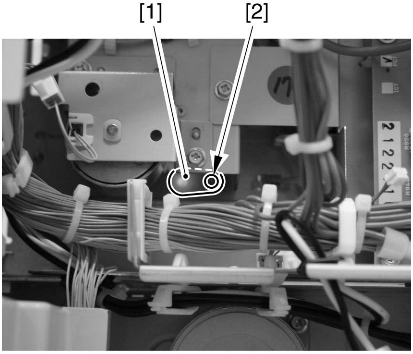
8.9.22.6 Removing the Contact Guide and the Pre-Registration Guide Fixing Boss

1) Remove the screw [2], and detach the contact guide [1].



F-8-315

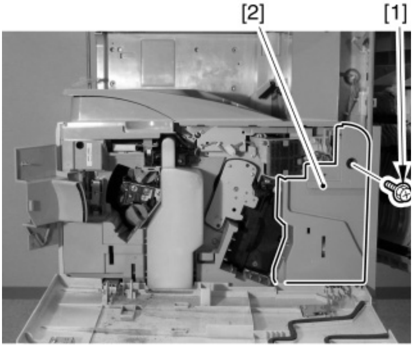
2) Remove the screw [2], and detach the pre-registration guide fixing boss (rear)



F-8-316

8.9.22.7 Removing the Inside Front Cover (right)

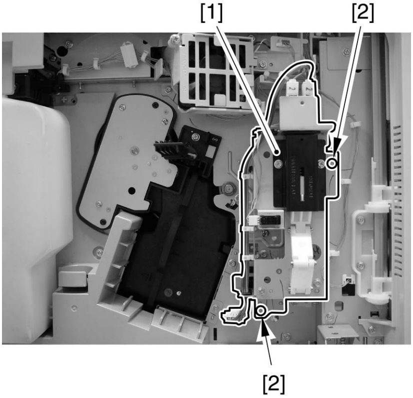
1) Remove the screw [1], and detach the inside front cover (right) [2].



F-8-317

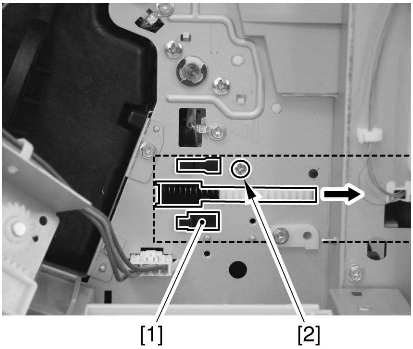
8.9.22.8 Removing the Registration Sensor

1) Remove the 2 screws [2], and detach the front cover switch gear unit [1].



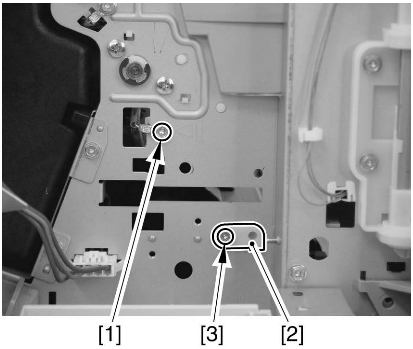
F-8-318

2) Remove the screw [2], and detach the front cover switch link [1].



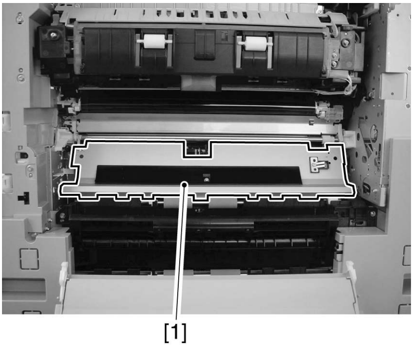
F-8-319

3) Remove the screw, and detach the varistor fixing screw [1] and the pre-registration guide fixing boss (front) [2].



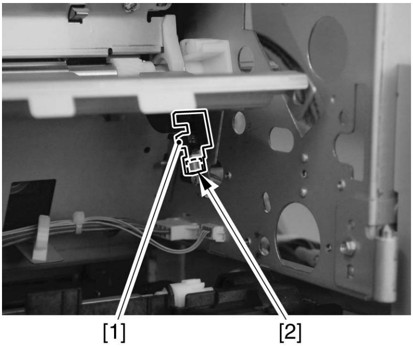
F-8-320

4) Shift up the per-registration guide [1].



F-8-321

5) Remove the stop, and disconnect the connector [2]; then, detach the registration sensor [1].



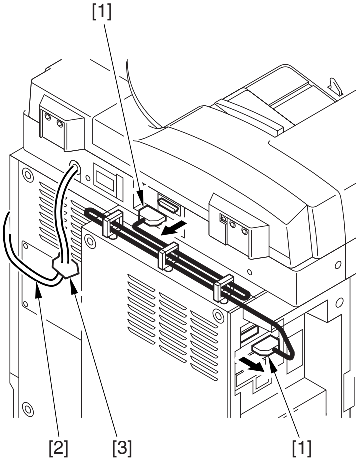
F-8-322

8.9.23 Registration Clutch

8.9.23.1 Removing the Rear Cover

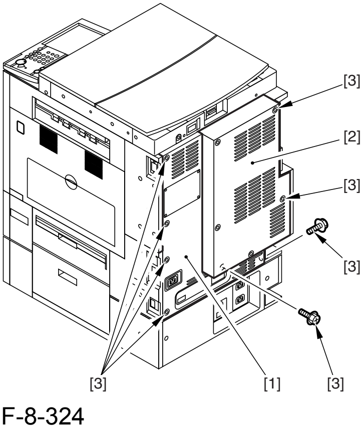
1) Disconnect the 2 connectors [1] of the reader communication cable.

2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-323

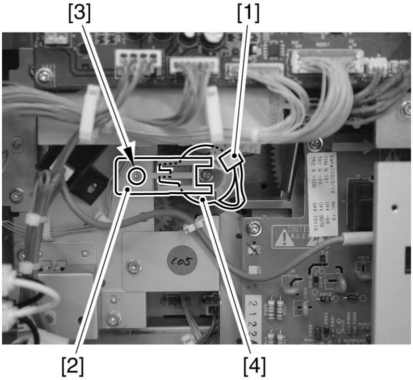
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-8-324

8.9.23.2 Removing the Registration Clutch

1) Disconnect the connector (3P) [1]; at the same time, remove the screw [3], and detach the stop [2].
2) Pull out the registration clutch [4] to the front to detach.

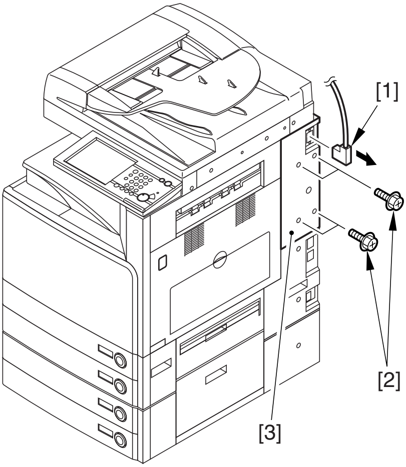


F-8-325

8.9.24 Vertical Path Roller

8.9.24.1 Removing the Right Cover (upper rear)

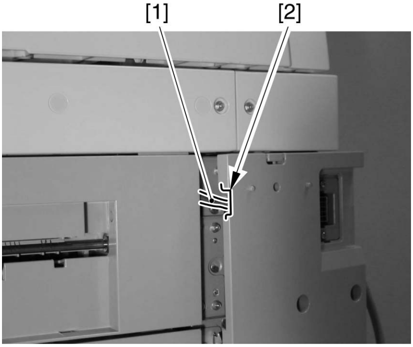
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-326

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

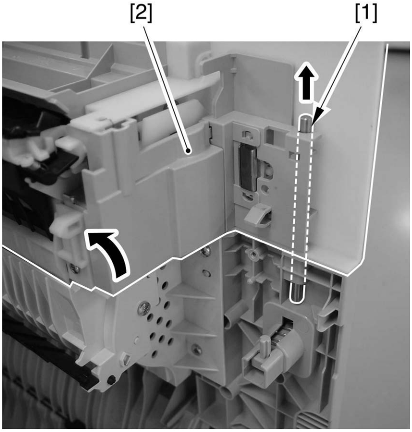
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-327

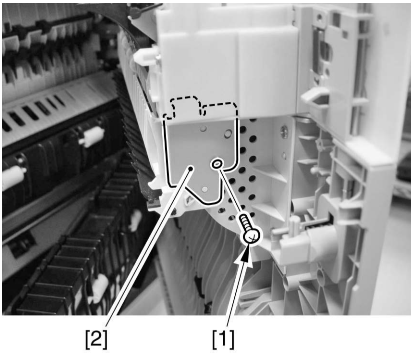
8.9.24.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-328

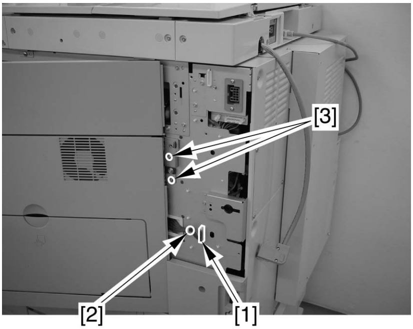
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-329

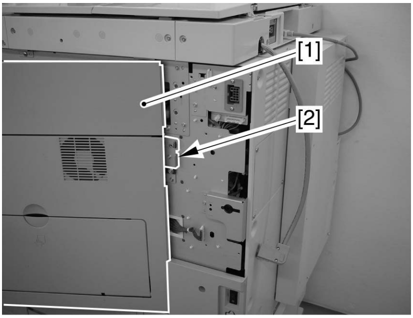
4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-8-330

6) Detach the right door [1] together with the hinge [2].

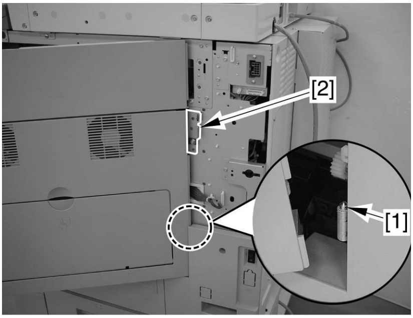


F-8-331

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



F-8-332

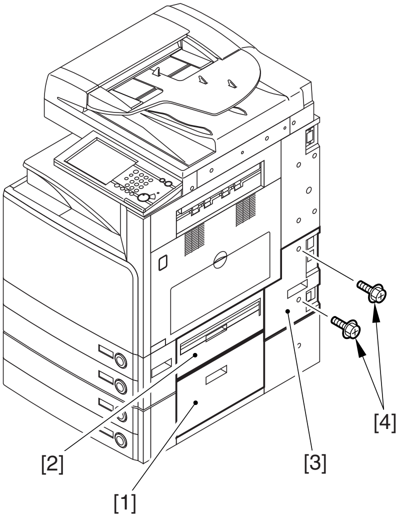
⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.9.24.3 Removing the Right Cover (lower rear)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower rear) [3].



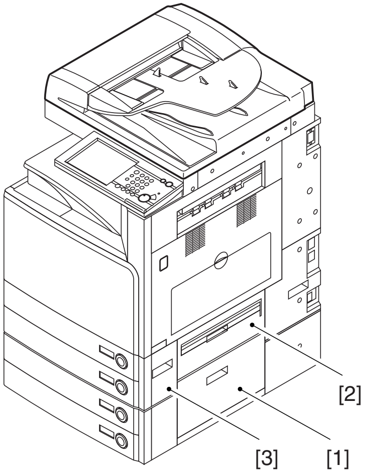
F-8-333

8.9.24.4 Removing the Right Cover (lower front)

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower front) [3].

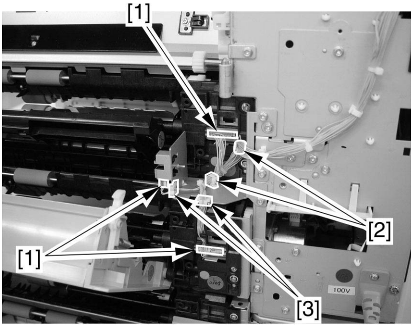


F-8-334

8.9.24.5 Removing the Pickup Assembly 1

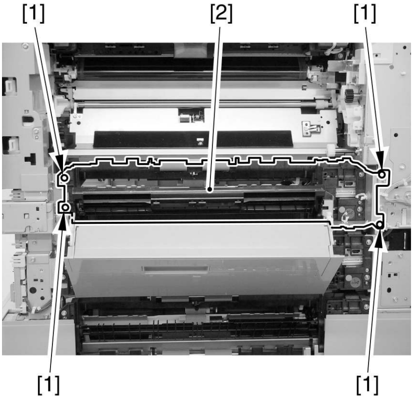
1) Slide out the cassette 1/2.

2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-335

3) Remove the 4 screws [1], and take out the pickup unit 1 [2].

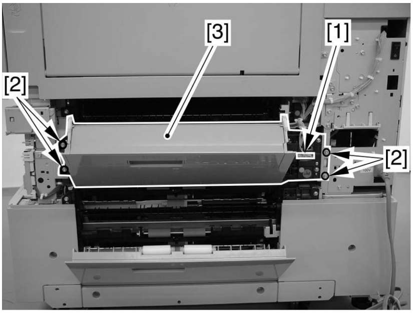


F-8-336

8.9.24.6 Removing the Pickup Assembly 2

1) Slide out the cassette 1/2.

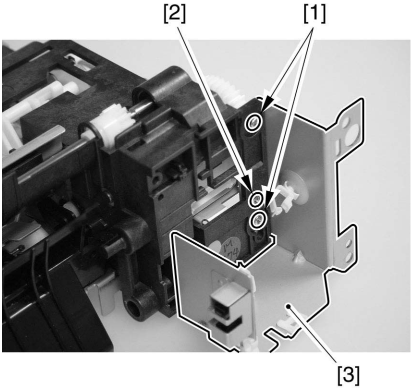
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-337

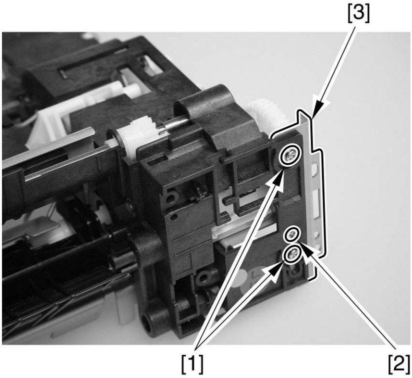
8.9.24.7 Removing the Sensor Base

1) Remove the 2 TP screws [1] and the binding screw [2] from the rear of the pickup assembly, and detach the bracket [3].



F-8-338

Pickup Unit 1

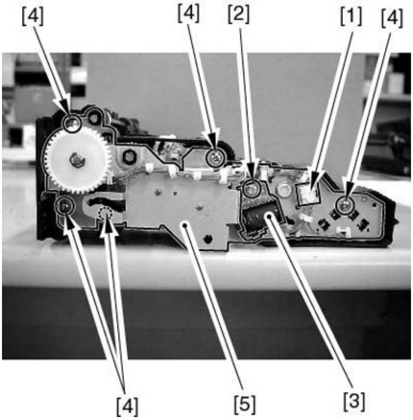


F-8-339

Pickup Unit 2

2) Disconnect the connector [1], and remove the screw; then, detach the cassette pickup solenoid [3].

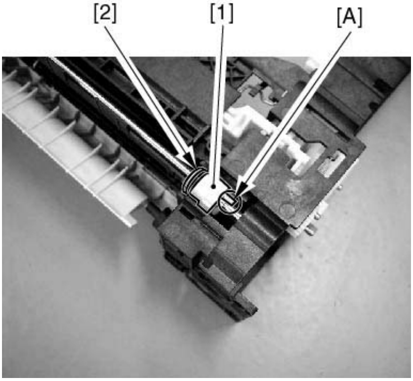
3) Remove the bushing and the 5 screws [4]; then, detach the sensor base [5].



F-8-340

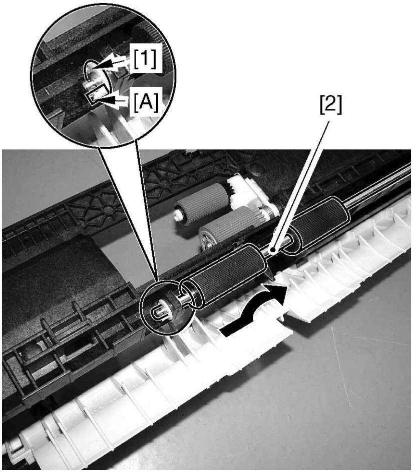
8.9.24.8 Removing the Vertical Path Roller

1) Free the claw [A] of the gear [1] at the rear; then, detach the gear and the bushing [2].



F-8-341

2) Free the claw [A] of the bushing [1] at the front; then, shift it to the rear, and lift the vertical path roller [2] to detach.



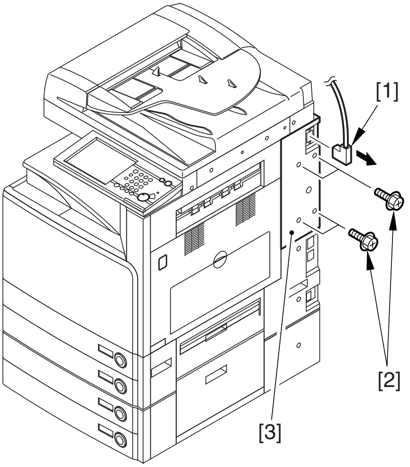
F-8-342

8.9.25 Duplex Feed Roller 2

8.9.25.1 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

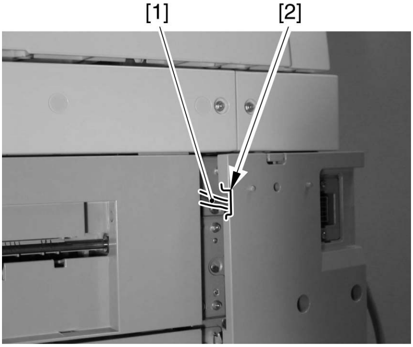
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-343

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

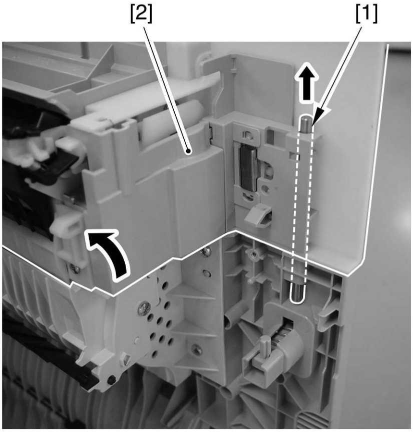


F-8-344

8.9.25.2 Removing the Right Door

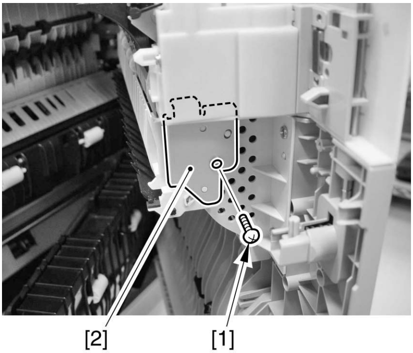
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-345

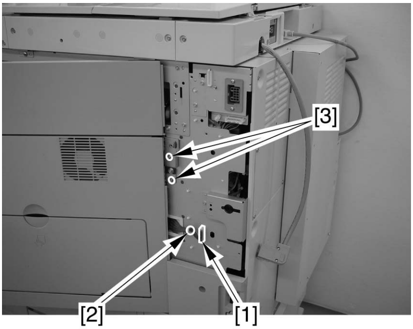
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-346

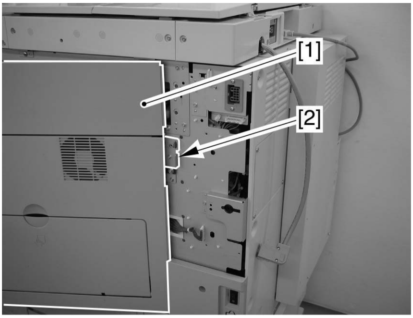
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-347

6) Detach the right door [1] together with the hinge [2].

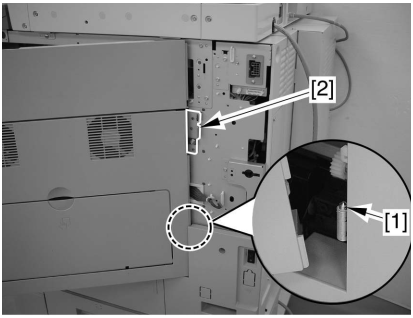


F-8-348

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

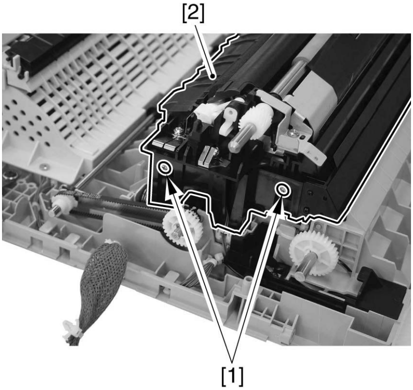


F-8-349

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

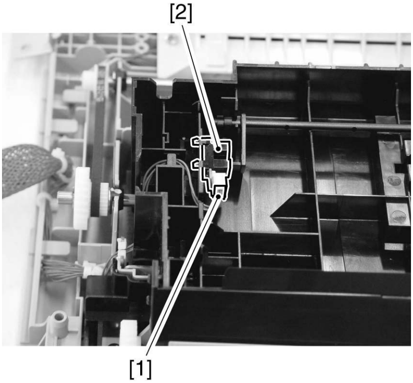
8.9.25.3 Removing the Duplex Feed Sensor

1) Remove the 2 screws (w/ collar) [1], and detach the transfer frame [2].



F-8-350

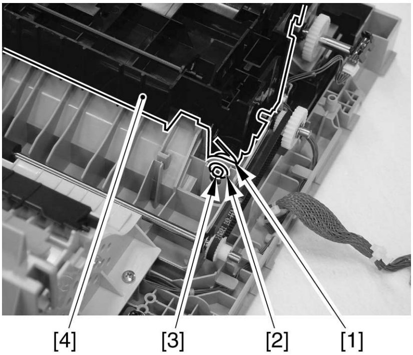
2) Disconnect the connector [1], and remove the duplex feed sensor [2].



F-8-351

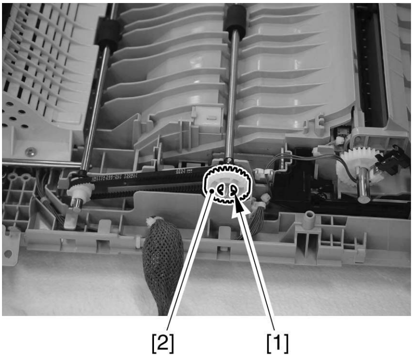
8.9.25.4 Removing the Duplex Feed Roller 2

1) Free the coil spring [1] and, at the same time, remove the E-ring [2] to pull out the shaft [3]; then, detach the duplex feed frame [4].



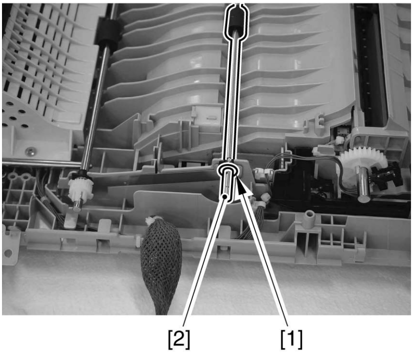
F-8-352

2) Remove the E-ring [1], and detach the one-way gear [2].



F-8-353

3) Remove the E-ring [1], and detach the duplex feed roller 2 [2].



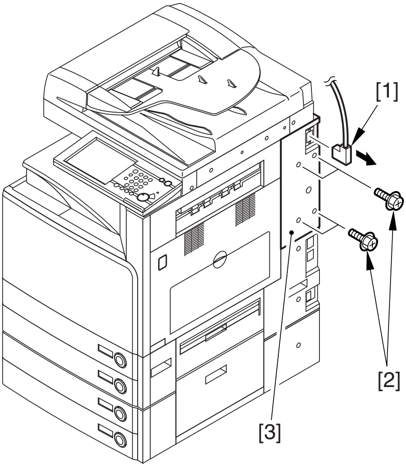
F-8-354

8.9.26 Duplex Feed Sensor

8.9.26.1 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

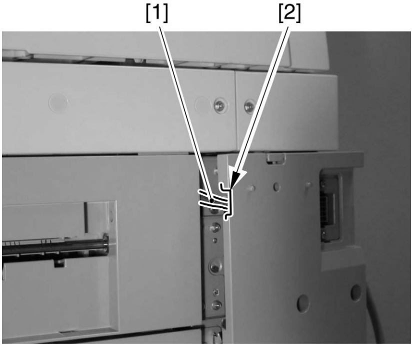
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-355

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

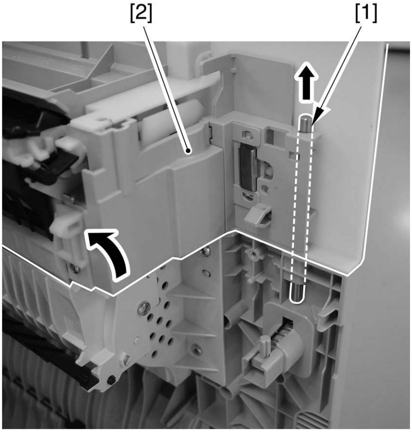
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-356

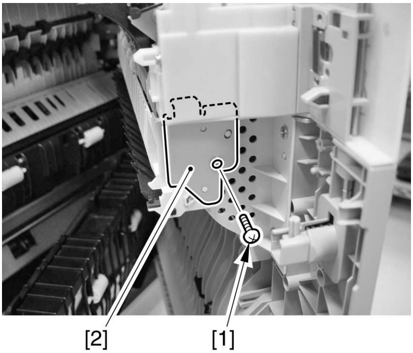
8.9.26.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-357

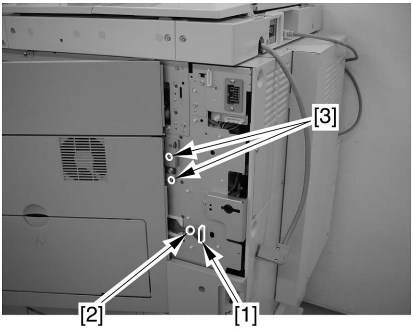
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-358

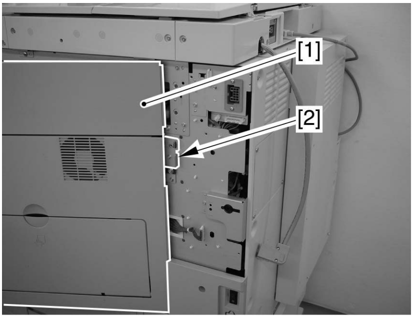
4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-8-359

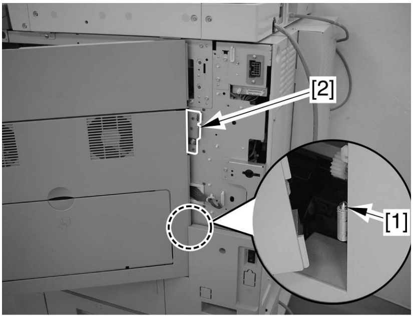
6) Detach the right door [1] together with the hinge [2].



F-8-360

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



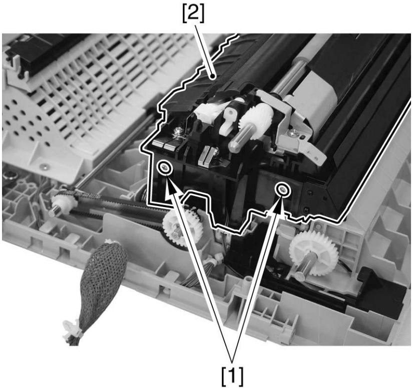
F-8-361

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.9.26.3 Removing the Duplex Feed Sensor

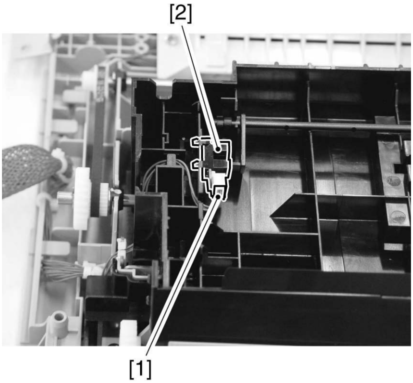
iR C3100

1) Remove the 2 screws (w/ collar) [1], and detach the transfer frame [2].



F-8-362

2) Disconnect the connector [1], and remove the duplex feed sensor [2].

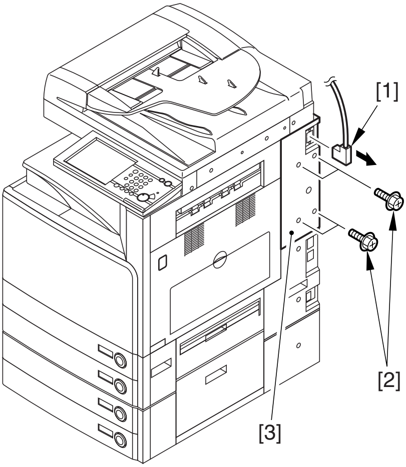


F-8-363

8.9.27 Duplex Feed Clutch

8.9.27.1 Removing the Right Cover (upper rear)

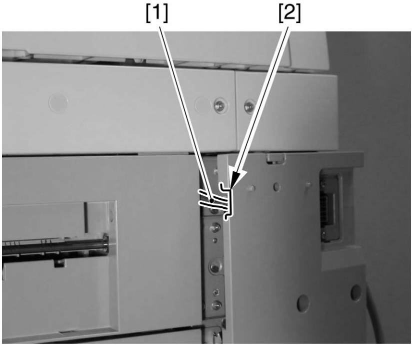
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-364

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

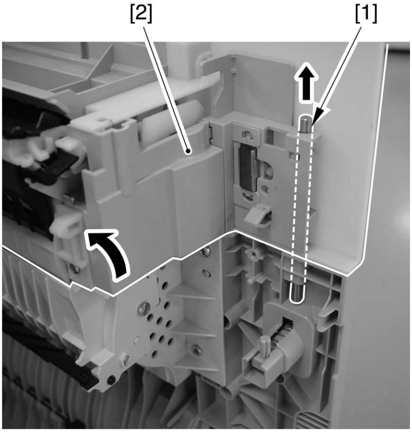


F-8-365

8.9.27.2 Removing the Right Door

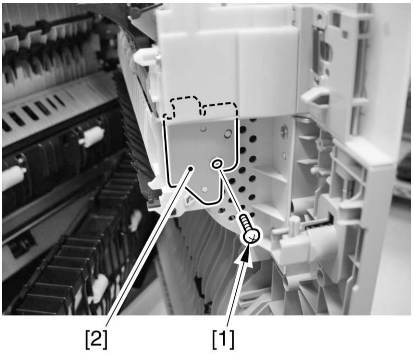
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-366

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.

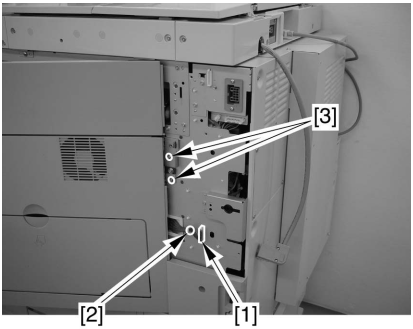


F-8-367

4) Disconnect the connector [1], and remove the clamp [2].

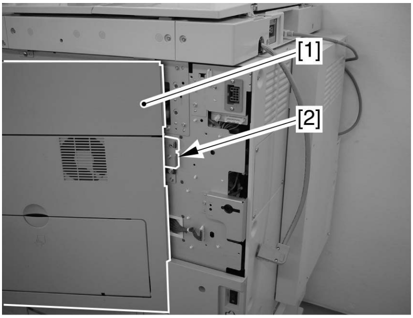
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-8-368

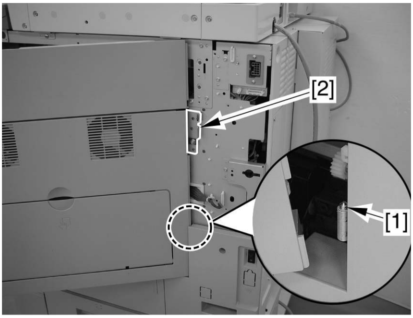
6) Detach the right door [1] together with the hinge [2].



F-8-369

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

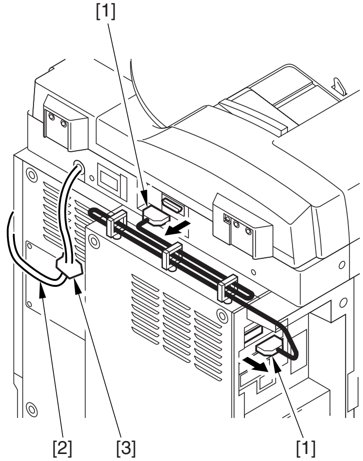


F-8-370

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

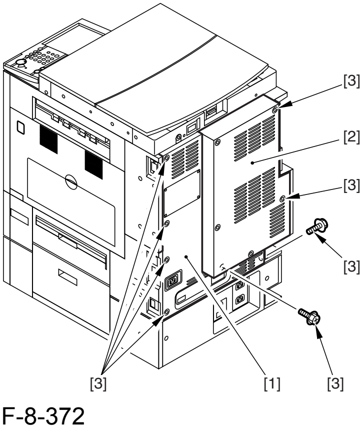
8.9.27.3 Removing the Rear Cover

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-371

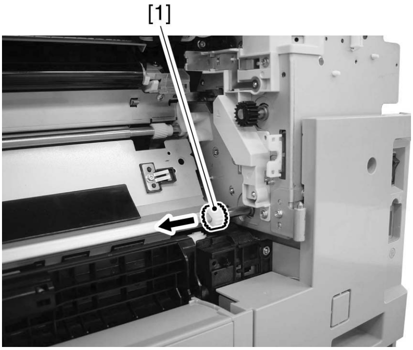
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-8-372

8.9.27.4 Removing the Duplex Feed Clutch

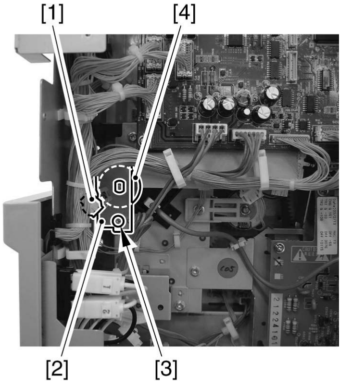
1) Remove the duplex drive gear [1].



F-8-373

2) Disconnect the connector [1]; at the same time, remove the screw [3], and detach the stop [2].

3) Pull out the duplex feed clutch [4] to the front.



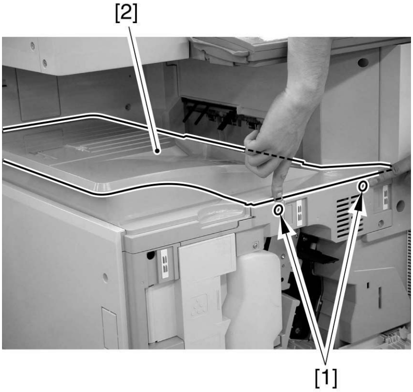
F-8-374

8.9.28 Delivery Assembly 1

8.9.28.1 Removing the Delivery Tray

1) Open the front cover.

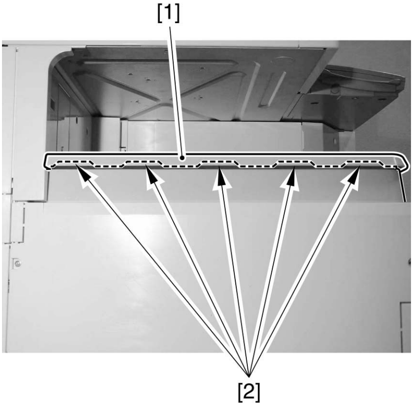
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-8-375

⚠Points to Note When Mounting the Delivery Tray

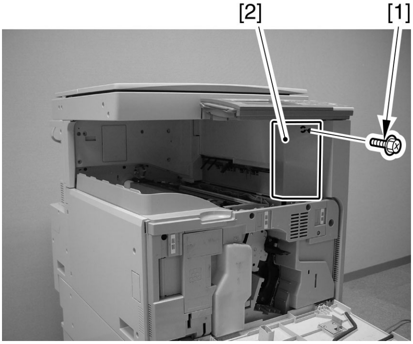
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-8-376

8.9.28.2 Removing the Support Cover

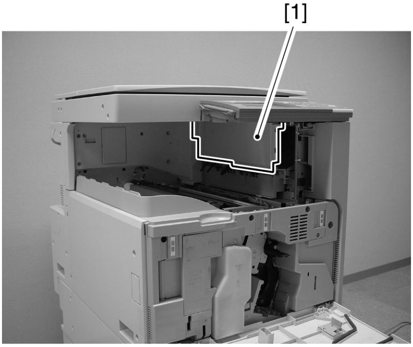
1) Remove the screw [1], and detach the support cover [2].



F-8-377

8.9.28.3 Removing the Delivery Tray Right Cover

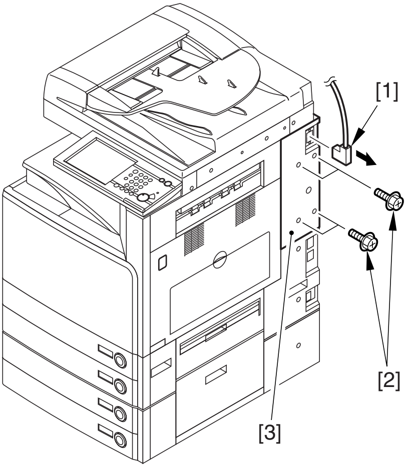
1) Remove the delivery tray right cover [1]. (There is no mounting screw used for the delivery tray right over.)



F-8-378

8.9.28.4 Removing the Right Cover (upper rear)

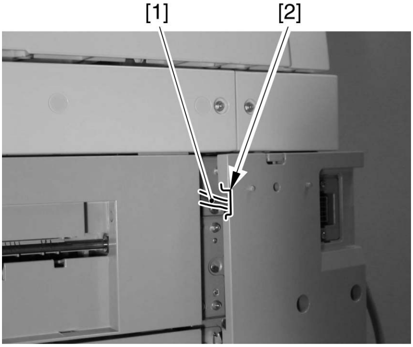
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-379

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

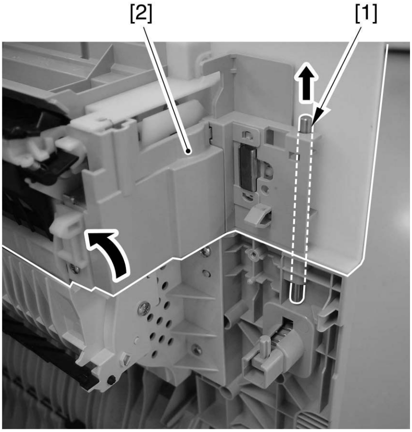


F-8-380

8.9.28.5 Removing the Right Door

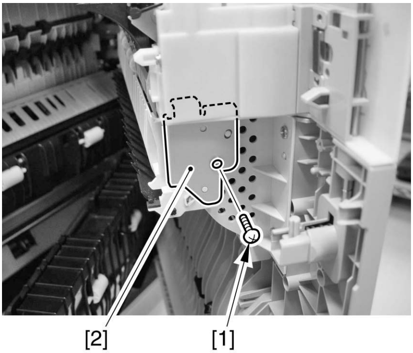
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-381

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.

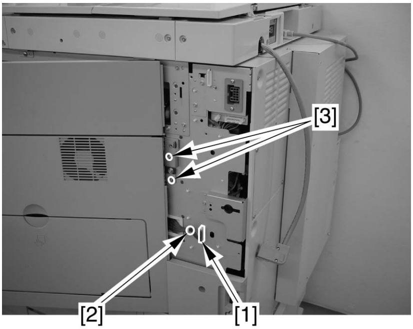


F-8-382

4) Disconnect the connector [1], and remove the clamp [2].

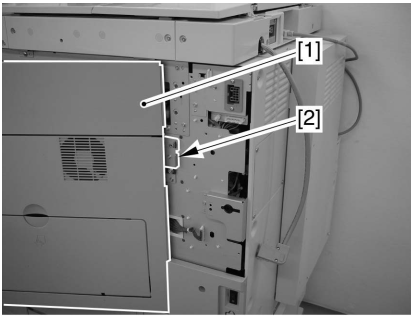
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-8-383

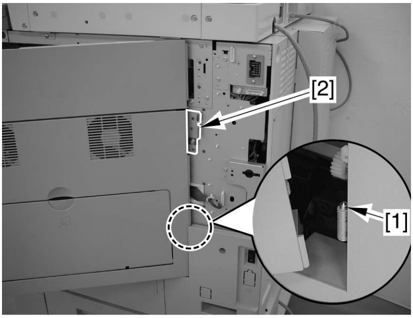
6) Detach the right door [1] together with the hinge [2].



F-8-384

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

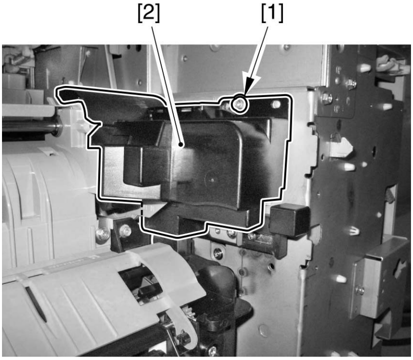


F-8-385

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

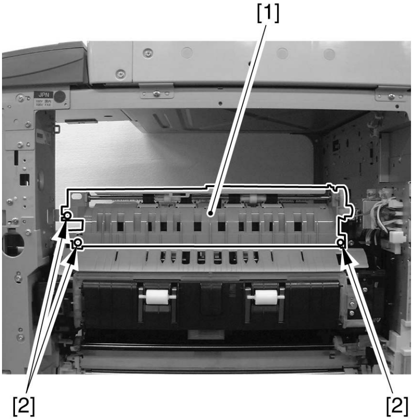
8.9.28.6 Removing the Delivery Assembly 1

1) Remove the screw [1], and detach the connector cover [2].



F-8-386

2) Remove the delivery assembly 1 [1]. (3 screws [2]; 2 on the left are stepped screws)



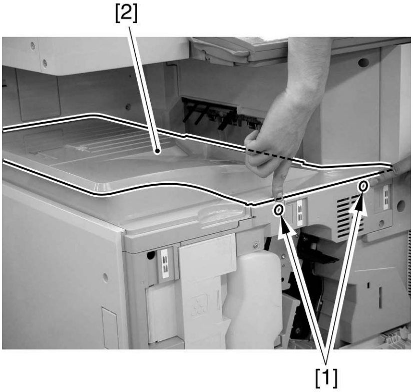
F-8-387

8.9.29 Delivery Drive Unit

8.9.29.1 Removing the Delivery Tray

1) Open the front cover.

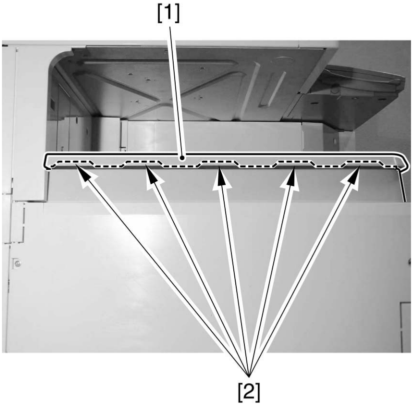
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-8-388

⚠Points to Note When Mounting the Delivery Tray

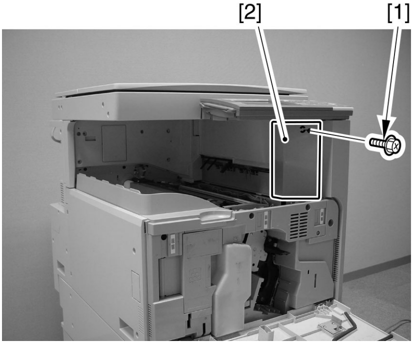
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-8-389

8.9.29.2 Removing the Support Cover

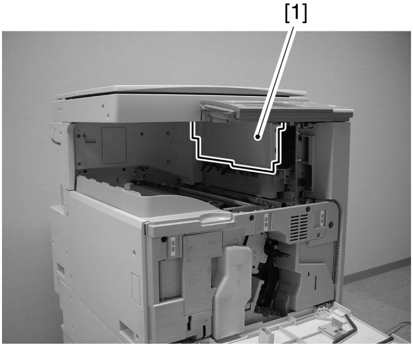
1) Remove the screw [1], and detach the support cover [2].



F-8-390

8.9.29.3 Removing the Delivery Tray Right Cover

1) Remove the delivery tray right cover [1]. (There is no mounting screw used for the delivery tray right over.)

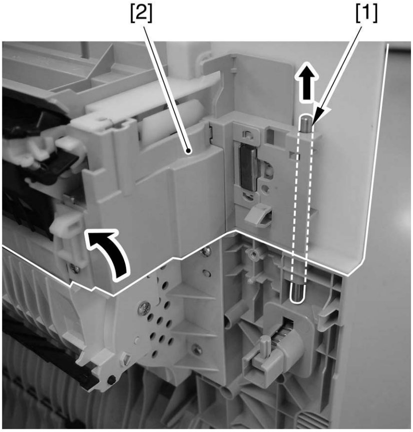


F-8-391

8.9.29.4 Removing the Right Door

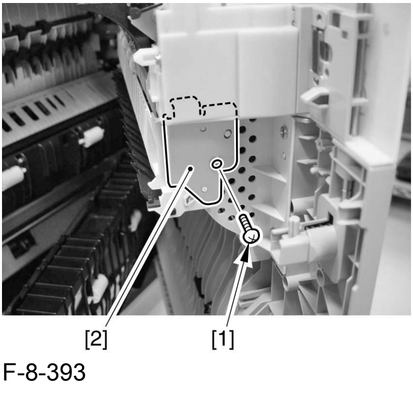
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-392

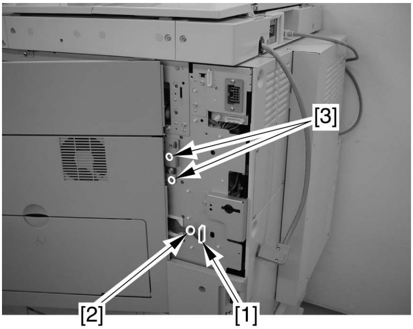
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-393

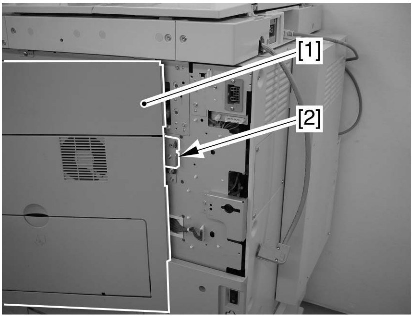
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-394

6) Detach the right door [1] together with the hinge [2].

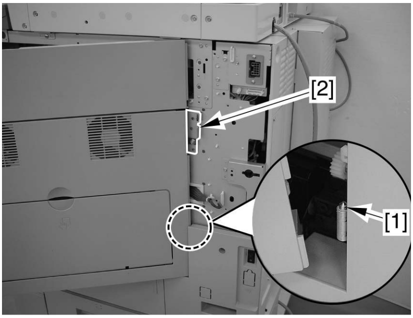


F-8-395

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

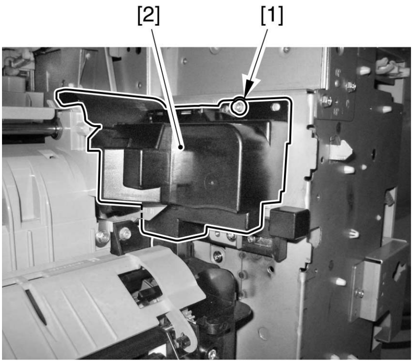


F-8-396

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

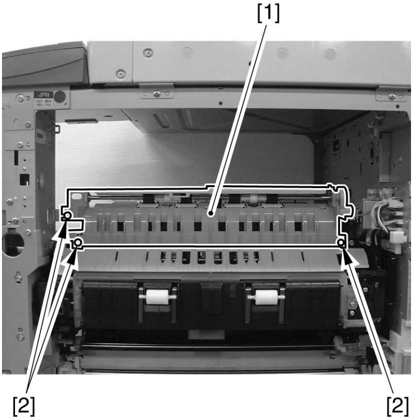
8.9.29.5 Removing the Delivery Assembly 1

1) Remove the screw [1], and detach the connector cover [2].



F-8-397

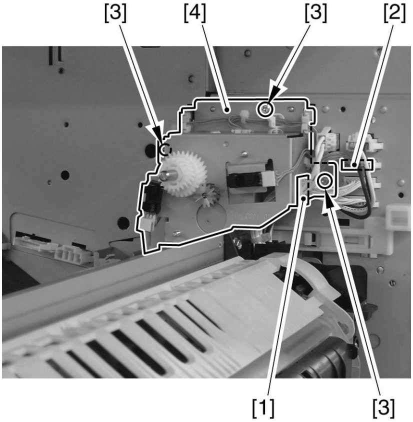
2) Remove the delivery assembly 1 [1]. (3 screws [2]; 2 on the left are stepped screws)



F-8-398

8.9.29.6 Removing the Delivery Drive Assembly

1) Free the fixing harness from the clamp [1].
2) Disconnect the connector [2], and remove the 3 screws [3]; then, detach the delivery drive assembly 1 [4].



F-8-399

Chapter 9

Fixing System

Contents

9.1 Construction 9-1
  9.1.1 Specifications, Control Mechanisms, and Functions 9-1
  9.1.2 Major Components 9-2
  9.1.3 Construction of the Control System 9-6
9.2 Basic Sequence 9-7
  9.2.1 Sequence of Operations at Power-On 9-7
  9.2.2 Basic Sequence of Operations During Printing 9-8
9.3 Various Control Mechanisms 9-9
  9.3.1 Controlling the Speed of the Fixing Roller 9-9
    9.3.1.1 Overview 9-9
    9.3.1.2 Speed Control According to Paper Type 9-10
  9.3.2 Controlling the Fixing Roller Temperature 9-12
    9.3.2.1 Overview 9-12
    9.3.2.2 At Power-On 9-14
    9.3.2.3 At a Standby State 9-15
    9.3.2.4 At Time of Printing 9-17
    9.3.2.5 Return Sequence 9-19
  9.3.3 Detecting the Passage of Paper 9-20
    9.3.3.1 Detection of the Passage of Paper 9-20
9.4 Protective Functions 9-22
  9.4.1 Detecting Overheating by the Main Thermistor (TH1) 9-22
  9.4.2 Detecting Overheating by the Sub Thermistor (TH2) 9-24
  9.4.3 Detecting Overheating in Relation to a Triac Short-Circuit 9-25
  9.4.4 Detecting Overheating by the Thermal Switch (TP1) 9-26
  9.4.5 Detecting Overheating of the Heat Retention Heater (H3) 9-27
  9.4.6 Error 9-28
9.5 Parts Replacement Procedure 9-30
  9.5.1 Fixing Unit 9-30
    9.5.1.1 Removing the Right Cover (upper rear) 9-30
    9.5.1.2 Removing the Right Door 9-30
    9.5.1.3 Removing the Fixing Unit 9-32
  9.5.2 Fixing Upper Frame 9-33

9.5.2.1 Removing the Right Cover (upper rear) 9-33
9.5.2.2 Removing the Right Door 9-34
9.5.2.3 Removing the Fixing Unit 9-35
9.5.2.4 Removing the Fixing Inlet Guide 9-37
9.5.2.5 Removing the Fixing Roller... 9-38
9.5.2.6 Removing the Fixing Upper Frame 9-42
9.5.3 Fixing Roller 9-42
9.5.3.1 Removing the Right Cover (upper rear) 9-42
9.5.3.2 Removing the Right Door 9-43
9.5.3.3 Removing the Fixing Unit 9-45
9.5.3.4 Removing the Fixing Inlet Guide 9-46
9.5.3.5 Removing the Fixing Roller... 9-48
9.5.4 Pressure Roller 9-52
9.5.4.1 Removing the Right Cover (upper rear) 9-52
9.5.4.2 Removing the Right Door 9-52
9.5.4.3 Removing the Fixing Unit 9-54
9.5.4.4 Removing the Fixing Pressure Roller 9-55
9.5.5 Fixing Main Thermistor 9-58
9.5.5.1 Removing the Right Cover (upper rear) 9-58
9.5.5.2 Removing the Right Door 9-59
9.5.5.3 Removing the Fixing Unit 9-61
9.5.5.4 Removing the Fixing Main Thermistor 9-62
9.5.5.5 Point to Note About the Position of the Fixing Main Thermistor9-63
9.5.6 Fixing Sub Thermistor 9-64
9.5.6.1 Removing the Right Cover (upper rear) 9-64
9.5.6.2 Removing the Right Door 9-64
9.5.6.3 Removing the Fixing Unit 9-66
9.5.6.4 Removing the Fixing Sub Thermistor..................................... 9-67
9.5.6.5 Point to Note When Mounting the Fixing Sub Thermistor........ 9-68
9.5.7 Fixing Thermal Switch 9-68
9.5.7.1 Removing the Right Cover (upper rear) 9-68
9.5.7.2 Removing the Right Door 9-69
9.5.7.3 Removing the Fixing Unit 9-70
9.5.7.4 Removing the Fixing Thermal Switch..................................... 9-72
9.5.7.5 Point to Note When Mounting the Fixing Thermal Switch....... 9-72
9.5.8 Fixing Main Heater/Fixing Sub Heater... 9-73

    9.5.8.1 Removing the Right Cover (upper rear)....................................9-73
    9.5.8.2 Removing the Right Door 9-74
    9.5.8.3 Removing the Fixing Unit...9-76
    9.5.8.4 Removing the Fixing Inlet Guide..9-77
    9.5.8.5 Removing the Fixing Main Heater and the Fixing Sub Heater..9-79
9.5.9 Fixing Heat Retaining Heater...9-80
    9.5.9.1 Removing the Right Cover (upper rear)....................................9-80
    9.5.9.2 Removing the Right Door 9-81
    9.5.9.3 Removing the Fixing Unit...9-82
    9.5.9.4 Removing the Fixing Heat Retention Heater 9-84
9.5.10 Fixing Inlet Guide 9-86
    9.5.10.1 Removing the Right Cover (upper rear)..................................9-86
    9.5.10.2 Removing the Right Door 9-87
    9.5.10.3 Removing the Fixing Unit...9-88
    9.5.10.4 Removing the Fixing Inlet Guide...9-90
9.5.11 Fixing Delivery Guide..9-92
    9.5.11.1 Removing the Right Cover (upper rear)..................................9-92
    9.5.11.2 Removing the Right Door 9-92
    9.5.11.3 Removing the Fixing Unit...9-94
    9.5.11.4 Removing the Fixing Delivery Guide 9-95
9.5.12 Fixing Inlet Sensor 9-95
    9.5.12.1 Removing the Right Cover (upper rear)..................................9-95
    9.5.12.2 Removing the Right Door 9-96
    9.5.12.3 Removing the Fixing Unit...9-98
    9.5.12.4 Removing the Fixing Inlet Sensor..9-99
9.5.13 Fixing Delivery Sensor 9-101
    9.5.13.1 Removing the Right Cover (upper rear)................................9-101
    9.5.13.2 Removing the Right Door 9-102
    9.5.13.3 Removing the Fixing Unit...9-103
    9.5.13.4 Removing the Fixing Delivery Sensor 9-105

9.1 Construction

9.1.1 Specifications, Control Mechanisms, and Functions

The fixing system has the following functions:

T-9-1

Item	Description
Fixing method	by heat roller
Fixing heater	for fixing roller side, 2 heaters (main, sub)
	for pressure roller side, 1 heater (heat retention heater)
Control temperature	190 deg C (at standby)
Fixing drive control	by controlling speed of fixing roller (according to paper type)
Fixing temperature detection	by main thermistor (non-contact; TH1, fixing roller center)
	by sub thermistor (contact; TH2, fixing roller front end)
Protective function	for the following; cuts off power to fixing heater in response to error:
	- thermistor (TH1/TH2; temperature control)
	- fixing thermal switch (TP1; fixing roller rear end; operating temperature of 190 +8, -8 deg C)
	- thermistor connection detection
separation claw	non-contact type (assists separation of paper in high humidity environment; in normal environment, separation by fixing/ pressure roller)
Bias application	none
Cleaning mechanism	none (cleaning-less)
Oil application	none (oil-less fixing)

Unlocking mechanism	none (jam removal handle used)

Ref:

Cleaning-less Mechanism

The area of the machine where paper moves is free of an object that comes into contact with the fixing roller (e.g., separation claw, thermistor, thermal switch) so that the fixing roller remains free of adhesion of paper lint or dust.

Ref:

Separation of Paper

The pressure of the separation roller in the fixing assembly is more or less identical at the roller center and ends; for this reason, paper comes into contact with and leaves the roller under even pressure across the roller.

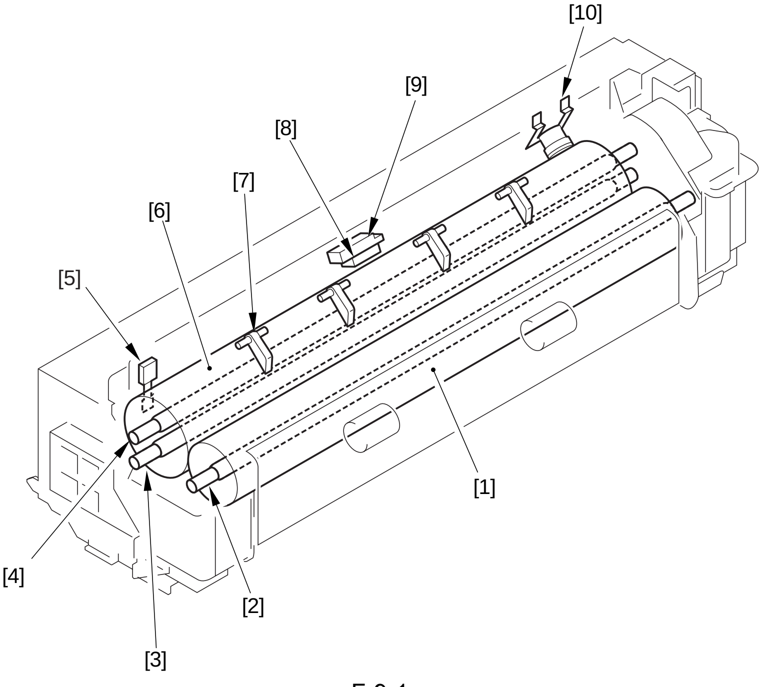
9.1.2 Major Components

The fixing assembly consists of the following components offering the indicated functions:

T-9-2

Item	Notation	Description
Fixing roller		48.5 mm in outside diameter
Pressure roller		38.0 mm in outside diameter
Main heater	H1	485 W (100/115/230 V halogen heater)
Sub heater	H2	315 W (100/115/230 V halogen heater)
Heat retention heater	H3	80 W (24 V; DC heater)
Main thermistor	TH1	non-contact thermistor (temperature control, overheating detection)
Sub thermistor	TH2	non-contact thermistor (overheating detection)
Thermal switch	TP1	contact type (operating temperature: 190 +8, -8 deg C)

Item	Notation	Description
Separation claw		non-contact type
Fixing inlet sensor	PS25	detects paper remaining in fixing assembly
Fixing delivery sensor	PS13	detects delivery of paper from fixing assembly
Fixing motor	M11	DC brush-less motor

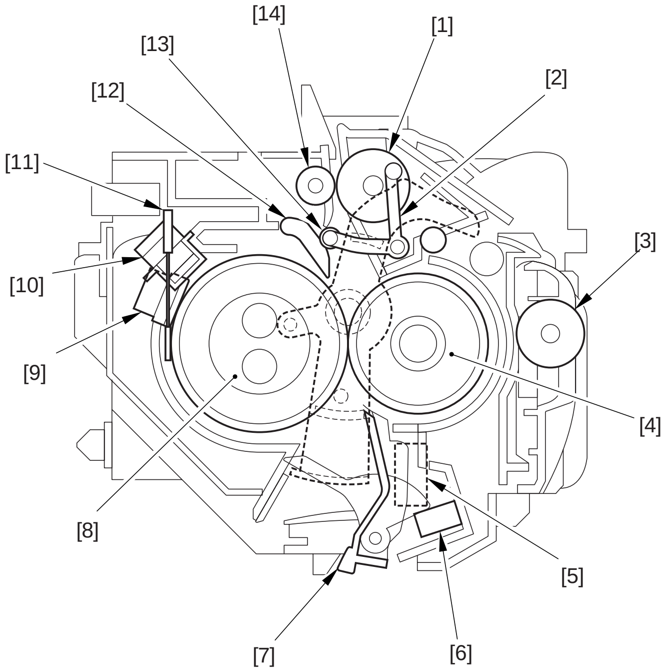


F-9-1

T-9-3

[1]	Pressure roller
[2]	Heat retention heater (H3)
[3]	Main heater (H1)

[4]	Sub heater (H2)
[5]	Sub thermistor (TH2)
[6]	Fixing roller
[7]	Separation claw
[8]	Thermistor cover
[9]	Main thermistor (TH1) (non-contact)
[10]	Thermal switch (TP1)


[14]
[13]
[1]
[12]
[2]
[11]
[3]
[10]
[9]
[4]
[8]
[5]
[7]
[6]

F-9-2

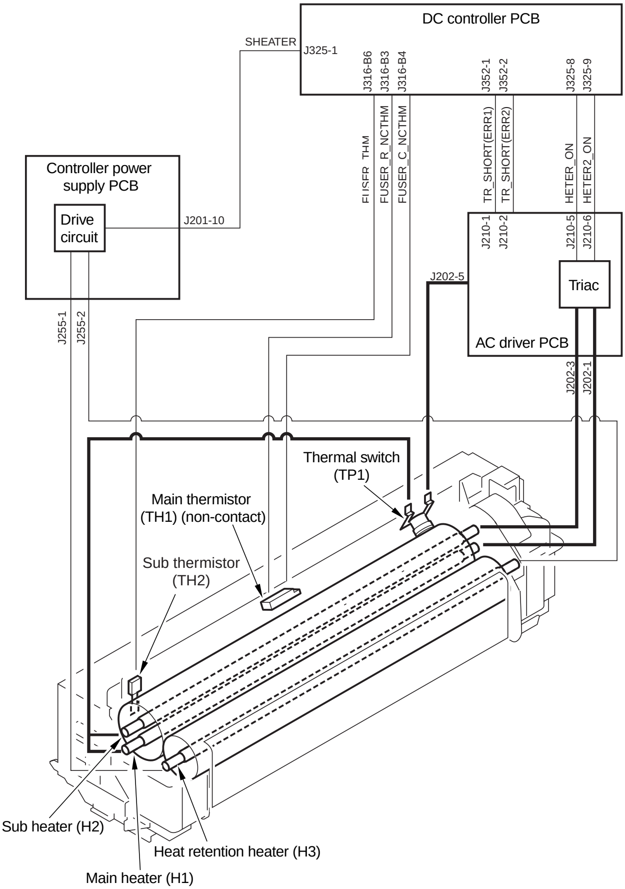
T-9-4

[1]	Fixing outlet roller

[2]	Fixing outlet sensor arm
[3]	Duplex feed roll 1
[4]	Pressure roller
[5]	Fixing outlet sensor (PS13)
[6]	Fixing inlet sensor (PS25)
[7]	Fixing inlet guide
[8]	Fixing roller
[9]	Thermal switch (TP1)
[10]	Main thermistor (TH1)
[11]	Sub thermistor (TH2)
[12]	Separation claw
[13]	Fixing outlet sensor roll
[14]	Fixing outlet roll

9.1.3 Construction of the Control System

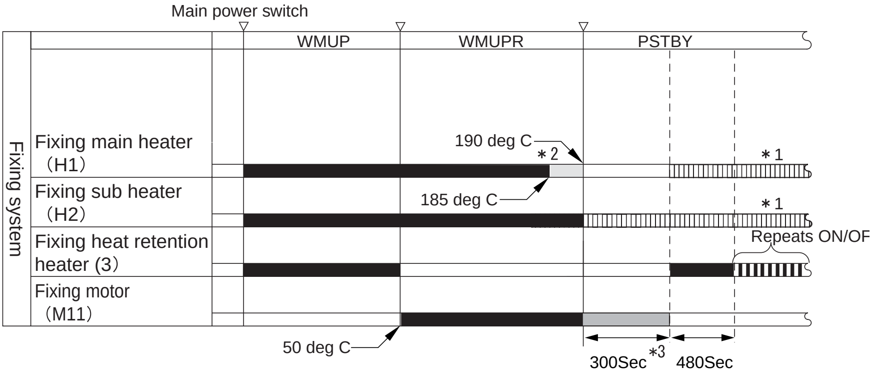
The following is a diagram of the construction of the fixing system:


DC controller PCB
SHEATER
J325-1
J316-B6
J316-B3
J316-B4
J352-1
J352-2
J325-8
J325-9
FUSER_THM
FUSER_R_NCTHM
FUSER_C_NCTHM
TR_SHORT(ERR1)
TR_SHORT(ERR2)
HETER_ON
HETER2_ON
Controller power supply PCB
Drive circuit
J201-10
J210-1
J210-2
J210-5
J210-6
J202-5
Triac
AC driver PCB
J255-1
J255-2
J202-3
J202-1
Thermal switch (TP1)
Main thermistor (TH1) (non-contact)
Sub thermistor (TH2)
Sub heater (H2)
Heat retention heater (H3)
Main heater (H1)

F-9-3

9.2 Basic Sequence

9.2.1 Sequence of Operations at Power-On


Main power switch
WMUP
WMUPR
PSTBY
Fixing system
Fixing main heater (H1)
Fixing sub heater (H2)
Fixing heat retention heater (3)
Fixing motor (M11)
190 deg C
*2
185 deg C
*1
*1
Repeats ON/OF
50 deg C
300Sec
*3
480Sec

F-9-4

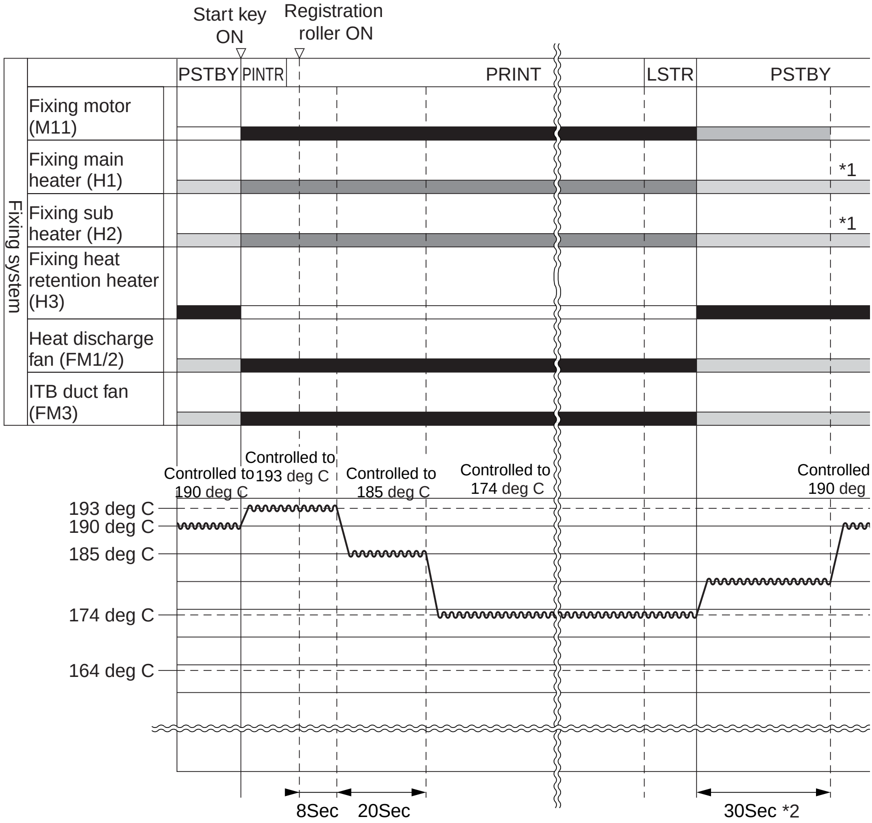
*1: executes temperature control using the main heater or the sub heater according to the difference in temperature readings between the main thermistor (TH1) and the sub thermistor (TH2).

*2: executes temperature control using the sub heater to reduce overshooting (from when the temperature reaches 180 deg C until the warm-up period ends). However, if the temperature is less than 170 deg C at the start of the warm-up period, the main heater will also be used.

*3: executes half-speed rotation if printing starts at the end of the warm-up period.

9.2.2 Basic Sequence of Operations During Printing

Printing starts in a standby state (black-and-white, plain paper).


Start key ON
Registration roller ON
PSTBY
PINTR
PRINT
LSTR
PSTBY
Fixing system
Fixing motor (M11)
Fixing main heater (H1)
Fixing sub heater (H2)
Fixing heat retention heater (H3)
Heat discharge fan (FM1/2)
ITB duct fan (FM3)
*1
*1
Controlled to 190 deg C
Controlled to 193 deg C
Controlled to 185 deg C
Controlled to 174 deg C
Controlled 190 deg
193 deg C
190 deg C
185 deg C
174 deg C
164 deg C
8Sec
20Sec
30Sec *2

F-9-5

*1: executes temperature control (to 190 deg C) using the main heater or the sub heater according to the difference in temperature readings between the main thermistor (TH1) and the sub thermistor (TH2).

*2: executes idle rotation of the fixing motor and temperature control at 180 deg C after the end of printing that lasts 180 sec or more.

9.3 Various Control Mechanisms

9.3.1 Controlling the Speed of the Fixing Roller

9.3.1.1 Overview

The fixing roller is driven by an exclusive DC motor (M11).

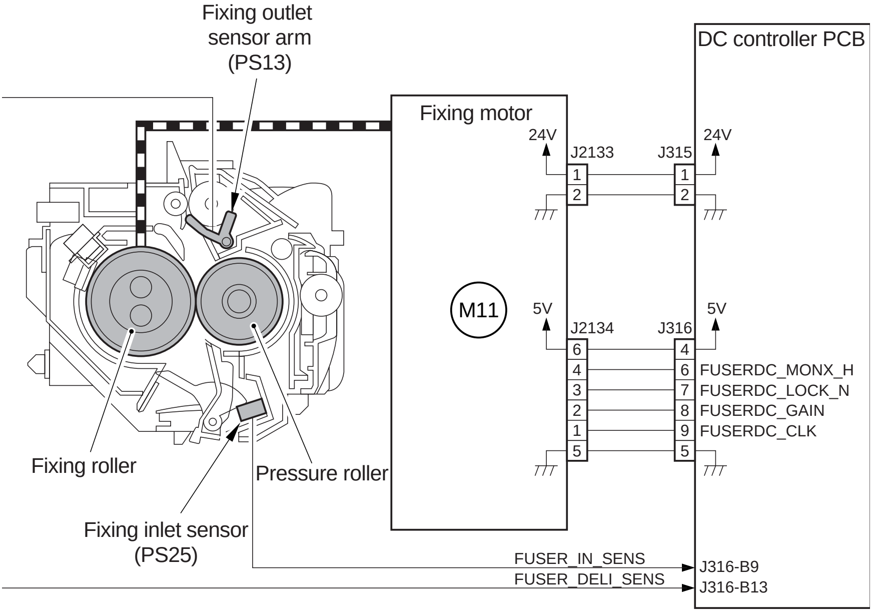
The speed of the fixing roller is controlled for the following:

1. speed control for paper type.
2. speed control for printing volume.
3. control against partial deformation of roller (otherwise caused by non-use over time).

The following signals are sent from the DC controller to the fixing motor (M11).

T-9-5

Signal	Description
FUSER_DC_MONX_H	motor drive signal; if '1', on; if '0', off.
FUSER_DC_LOCK_N	motor speed detection signal; if '0', off or short in revolution; if '1', normal rotation.
FUSER_DC_GAIN	motor speed control signal; if '1', half-speed; if '0', full speed.
FUSER_DC_CLK	basic frequency input to motor.


Fixing outlet sensor arm (PS13)
DC controller PCB
Fixing motor
24V
J2133
J315
24V
1
2
1
2
M11
5V
J2134
J316
5V
6
4
3
2
1
5
4
6
7
8
9
5
FUSERDC_MONX_H
FUSERDC_LOCK_N
FUSERDC_GAIN
FUSERDC_CLK
Fixing roller
Pressure roller
Fixing inlet sensor (PS25)
FUSER_IN_SENS
FUSER_DELI_SENS
J316-B9
J316-B13

F-9-6

9.3.1.2 Speed Control According to Paper Type

a. 2-Speed Control

The machine controls the fixing roller to 2 speeds to suit the type of paper being used.

T-9-6

Paper type	Fixing speed
Plain paper	137.0 mm/sec (full speed)
Heavy paper	68.5 mm/sec (half speed)
Mono color transparency	137.0 mm/sec (full speed)
Full color transparency	68.5 mm/sec (half speed)

Note:
The machine reduces the speed of the fixing roller (to half) for the following; if thick paper, to ensure good fixing; for full color transparencies, for good fixing of color toner layers to film.

b. Speed Control for Printing Volume (down sequence)

When a large volume of printing is undertaken, paper can collect heat from the pressure roller, increasing the curling at time of delivery and, thus, adversely affecting stacking (number of sheets that are stacked).
To prevent the symptom, the machine permits a change to the service mode settings so that the following takes place: after the 100th sheet in large size mode or after the 200th sheet in small size mode, the machine increases the distance between sheets and reduces the printing speed by half to decrease curling and ensuring good stacking. The machine refers to the counter reading for the sequence, not to the roller temperature reading.

F-9-7

Level 2
COPIER > OPTION > BODY > DWNSQ-SW
1: down sequence enabled.
0: down sequence disabled (default)

c. Prevention of Partial Deformation of the Roller (otherwise caused by no use over time)

The fixing roller can start to suffer deformation if left alone for a long time under temperature control (because of its nip). To prevent deformation, the machine rotates the fixing roller at 68.5 mm/sec (half speed) for a period of 0.5 sec every 30 min (during standby).

When the machine starts sleep mode, the machine turns off the power to the fixing motor (M11) to prevent the fixing motor from rotating; however, since the machine does not perform temperature control for fixing in sleep mode, the roller will not suffer deformation even when it remains stationary.

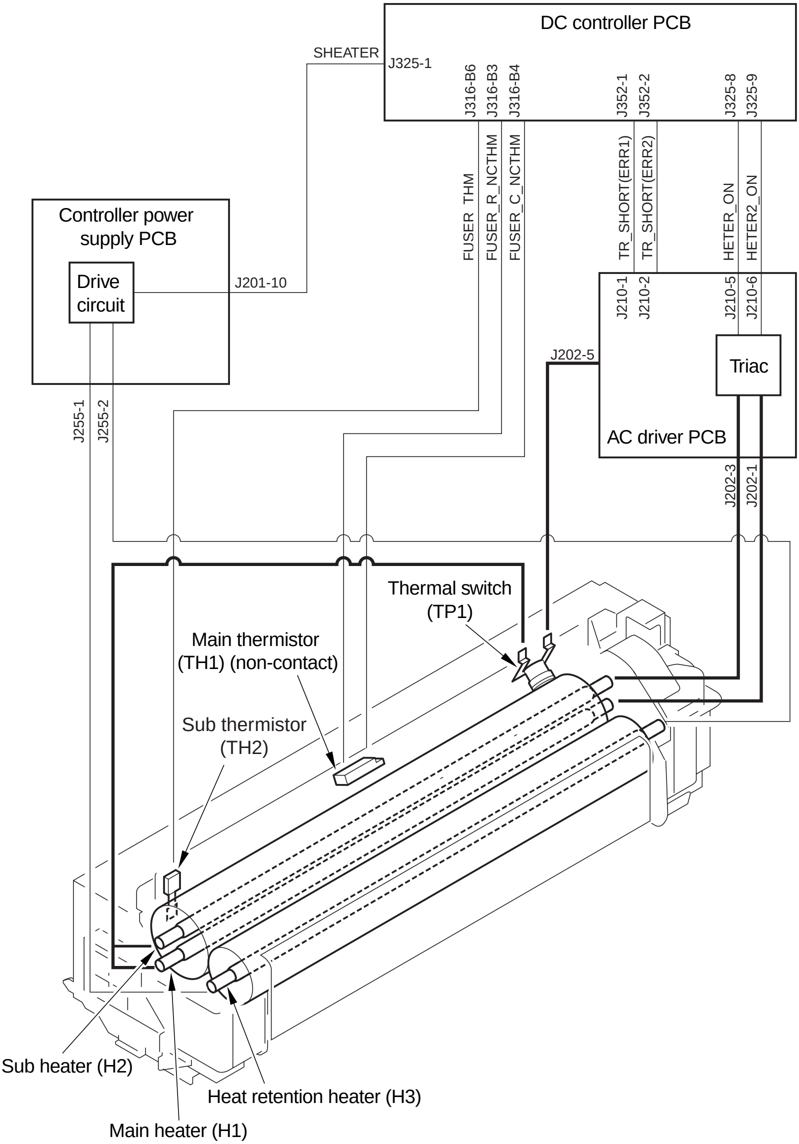
The machine performs temperature control for fixing while it is in power save mode (-50%) or in low-power mode, and turns off the power to the fixing motor (M11), thus preventing the fixing roller from rotating. If such a condition lasts for 4 hr or more, the roller can start to suffer deformation; the machine, however, is designed to shift to sleep mode before the passage of 4 hr so that the roller cannot start to suffer deformation.

9.3.2 Controlling the Fixing Roller Temperature

9.3.2.1 Overview

The following is a diagram of the mechanisms involved in fixing roller temperature control; see the detailed descriptions of the mechanism for the following states:

[1] at time of power-on
[2] in a standby state
[3] during printing
[4] return sequence


DC controller PCB
SHEATER
J325-1
J316-B6
J316-B3
J316-B4
J352-1
J352-2
J325-8
J325-9
FUSER_THM
FUSER_R_NCTHM
FUSER_C_NCTHM
TR_SHORT(ERR1)
TR_SHORT(ERR2)
HETER_ON
HETER2_ON
Controller power supply PCB
Drive circuit
J201-10
J210-1
J210-2
J210-5
J210-6
J202-5
Triac
AC driver PCB
J255-1
J255-2
J202-3
J202-1
Thermal switch (TP1)
Main thermistor (TH1) (non-contact)
Sub thermistor (TH2)
Sub heater (H2)
Heat retention heater (H3)
Main heater (H1)

F-9-8

9.3.2.2 At Power-On

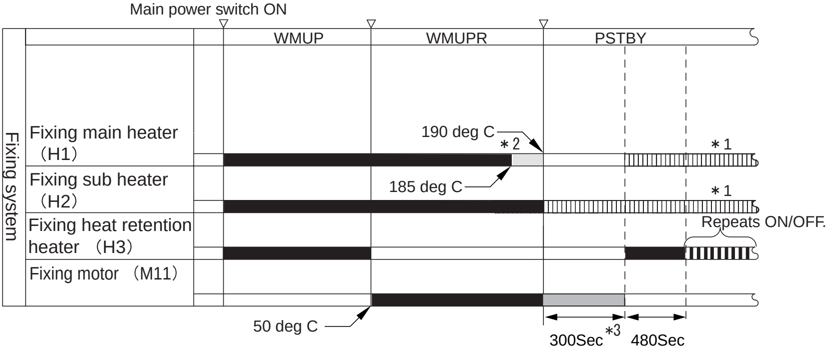
The fixing roller is heated by 2 fixing heaters (H1, main heater; H2, sub heater). The fixing pressure roller is heated by the heat retention heat heater (H3; DC heater). The main and sub heaters remain fully on until the fixing roller reaches 185 deg C. Thereafter, the sub heater remains fully on until the fixing roller reaches 190 deg C; when it reaches 190 deg C, the machine ends the warm-up period. (If the temperature is 170 deg C or more at the start of the warm-up period, however, the main heater will also remain fully on until the warm-up period ends.) The heat retention heater remains fully on from the start of the warm-up period until the temperature of the fixing roller reaches 50 deg C.

When the temperature of the fixing roller reaches 50 deg C, the machine starts initial multiple rotation (full speed), and continues it until the warm-up period ends (i.e., when the fixing roller is heated to 190 deg C).

If printing does not start at the end of the warm-up period, the machine rotates the fixing roller for 300 sec at half speed (following initial multiple rotation). While the roller is rotating at half speed, it is controlled to 195 deg C by the work of the sub heater.

Memo:

1. The machine accepts a print job at time of half-speed rotation; if 300 sec has not passed at the end of the job, it will continue half-speed rotation until 300 sec has passed.
2. The machine uses half-speed rotation so that the temperature of the pressure roller increases, thereby ensuring good fixing.



Main power switch ON
WMUP
WMUPR
PSTBY
Fixing system
Fixing main heater (H1)
Fixing sub heater (H2)
Fixing heat retention heater (H3)
Fixing motor (M11)
190 deg C
＊2
185 deg C
＊1
＊1
Repeats ON/OFF.
50 deg C
300Sec
*3
480Sec

F-9-9

*1: The machine executes temperature control (to 190 deg C) using the main heater or the sub heater according to the difference in temperature readings between the main thermistor (TH1) and the sub thermistor (TH2).

*2: The machine performs temperature control using the sub heater when the temperature reaches 180 deg C to reduce overshooting (until the end of the warm-up period). If the temperature at the start of the warm-up period is less than 170 deg C, the machine executes temperature control also using the main heater.

*3: If printing does not start at the end of the warm-up period, the machine executes half-speed rotation.

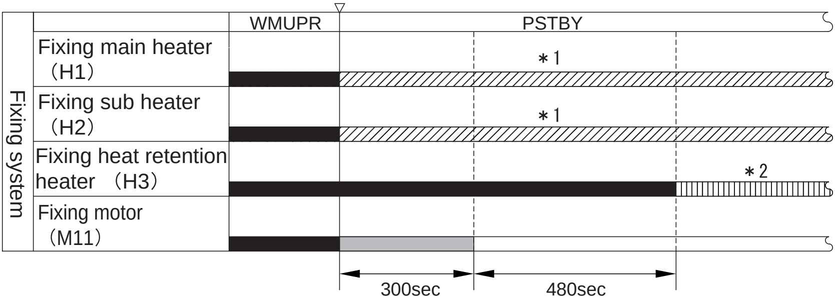
The machine uses half-speed rotation to increase the temperature of the pressure roller.

9.3.2.3 At a Standby State

The machine controls the temperature of the fixing roller using the main heater (H1) and the sub heater (H2) to 190 deg C based on the readings of the main thermistor (TH1; non-contact type) and the sub thermistor (TH2). If we assume that the reading of temperature by the main thermistor is Th1 and that by the sub thermistor is Th2,

- if Th1 is higher than Th2, the machine uses the sub thermistor to execute temperature control.
- if TH1 is lower than or is equal to Th2, the machine uses the main heater to execute temperature control.

Memo:
The main heater emits heat most at its center, while the sub heater emits heat most at its both ends.


WMUPR
PSTBY
Fixing system
Fixing main heater (H1)
Fixing sub heater (H2)
Fixing heat retention heater (H3)
Fixing motor (M11)
*1
*1
*2
300sec
480sec

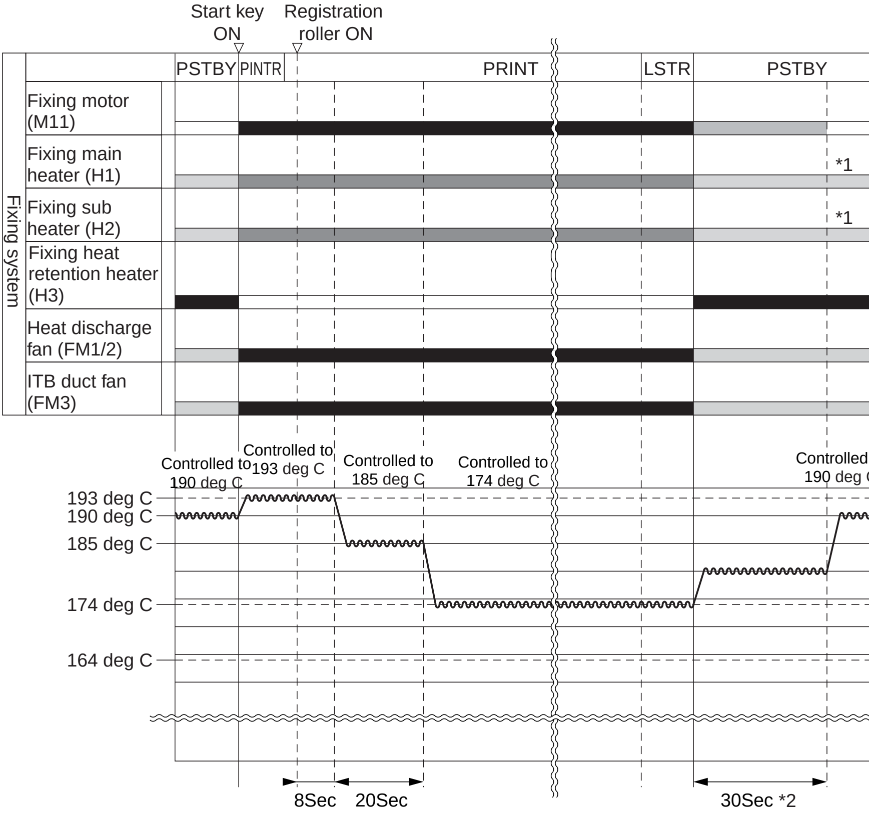
F-9-10

*1: The machine executes temperature control (to 190 deg C) using the main heater or the sub heater according to the difference in readings between the main thermistor (TH1) and the sub thermistor (TH2).

*2: The fixing heat retention heater repeats remaining on for 4.2 sec and off for 1.6

9.3.2.4 At Time of Printing

The machine controls the temperature of the fixing roller by turning on and off the main heater according to the reading of the main thermistor. The following shows how the machine controls the temperature when making black-and-white prints using plain paper:

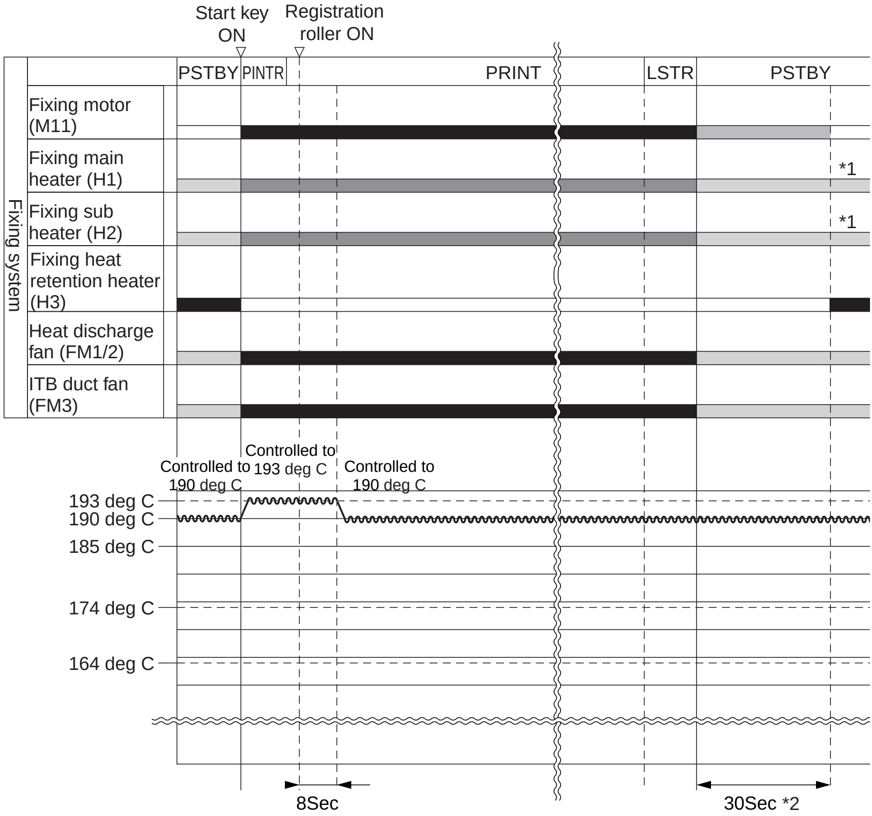

Start key ON
Registration roller ON
PSTBY
PINTR
PRINT
LSTR
PSTBY
Fixing system
Fixing motor (M11)
Fixing main heater (H1)
*1
Fixing sub heater (H2)
*1
Fixing heat retention heater (H3)
Heat discharge fan (FM1/2)
ITB duct fan (FM3)
Controlled to 190 deg C
Controlled to 193 deg C
Controlled to 185 deg C
Controlled to 174 deg C
Controlled 190 deg
193 deg C
190 deg C
185 deg C
174 deg C
164 deg C
8Sec
20Sec
30Sec *2

F-9-11

*1: The machine executes temperature control (to 190 deg C) using the main heater or the sub heater according to the difference in readings of the main thermistor (TH1) and the sub thermistor (TH2).

*2: The machine executes idle rotation of the fixing motor and temperature control to 180 deg C after a print job that lasts for 180 sec or more.

The machine uses the following temperature control sequence when making black-and-white prints on transparencies or making color prints.


Start key ON
Registration roller ON
PSTBY
PINTR
PRINT
LSTR
PSTBY
Fixing system
Fixing motor (M11)
Fixing main heater (H1)
Fixing sub heater (H2)
Fixing heat retention heater (H3)
Heat discharge fan (FM1/2)
ITB duct fan (FM3)
*1
*1
Controlled to 190 deg C
Controlled to 193 deg C
Controlled to 190 deg C
193 deg C
190 deg C
185 deg C
174 deg C
164 deg C
8Sec
30Sec *2

F-9-12

*1: The machine executes temperature control (to 190 dg C) using the main heater or the sub heater according to the difference in readings of the main thermistor (TH1) and the sub thermistor (TH2).

*: The machine executes idle rotation of the fixing motor after a print job that lasts 180 sec or more.

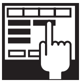
9.3.2.5 Return Sequence

Return from Power Save Mode/Jam Removal/Door Open State
The machine becomes ready for printing when the temperature of the main thermistor (TH1) reaches 190 deg C.

Return from Low Power Mode

- In the Case of Black-and-White Prints
The machine becomes ready for printing 30 sec (less than 180 deg C) after it starts return sequence.

- In the Case of Full Color Prints
The machine becomes ready for printing when the temperature of the main thermistor (TH1) reaches 180 deg C.



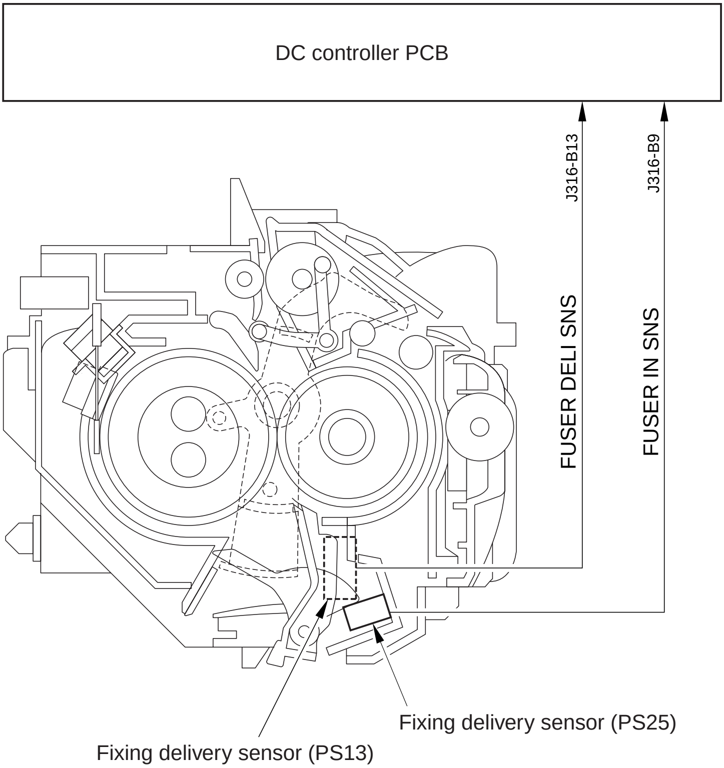
F-9-13

The machine permits a change to the conditions imposed on return from low power mode (so that it becomes ready for printing when the temperature of the main thermistor (TH1) reaches 180 deg C, 185 deg C, or 190 deg C).
COPIER>OPTION>BODY>LPM-RTRN
0: return in 30 sec (default)
1: return at 180 deg C
2: return at 185 deg C
3: return at 190 deg C

9.3.3 Detecting the Passage of Paper

9.3.3.1 Detection of the Passage of Paper

The following is a diagram of the mechanisms used by the machine to detect the passage of paper for the fixing unit:


DC controller PCB
J316-B13
J316-B9
FUSER DELI SNS
FUSER IN SNS
Fixing delivery sensor (PS25)
Fixing delivery sensor (PS13)

F-9-14

T-9-7

Sensor	Description
Fixing inlet sensor (PS25)	detects paper remaining at the fixing assembly inlet at power-on.
Fixing outlet sensor (PS13)	Detects paper delivered by the fixing assembly.

- Preventing Wrapping of Paper Around the Fixing Roller
The machine starts its mechanism to prevent wrapping of paper around the fixing roller in response to detection of a jam by the fixing inside sensor.

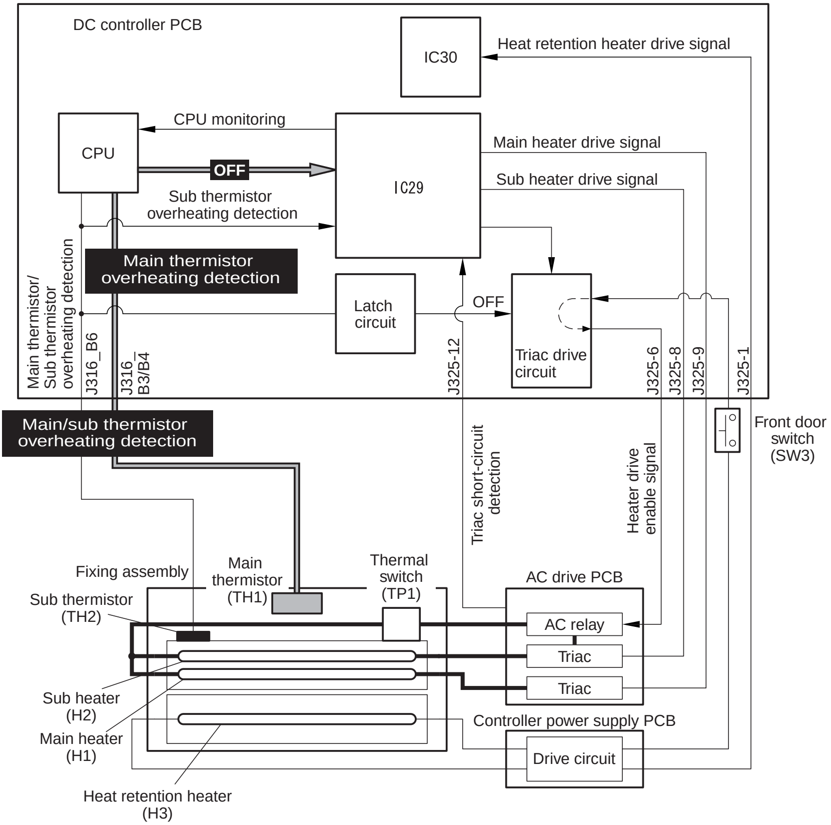
a. Fixing Inlet sensor (PS25)
When the fixing inlet sensor (PS25) detects a stationary jam at power-on, the machine does not execute initial multiple rotation, thereby preventing paper from wrapping around the fixing roller.
The fixing inlet sensor (PS25), however, does not check for a delay or stationary jam while feed operation is under way.

b. Fixing Outlet Sensor (PS13)
When the fixing outlet sensor (PS13) detects a delay jam, the machine stops the fixing motor (M11) to prevent wrapping of paper around the fixing roller.

9.4 Protective Functions

9.4.1 Detecting Overheating by the Main Thermistor (TH1)

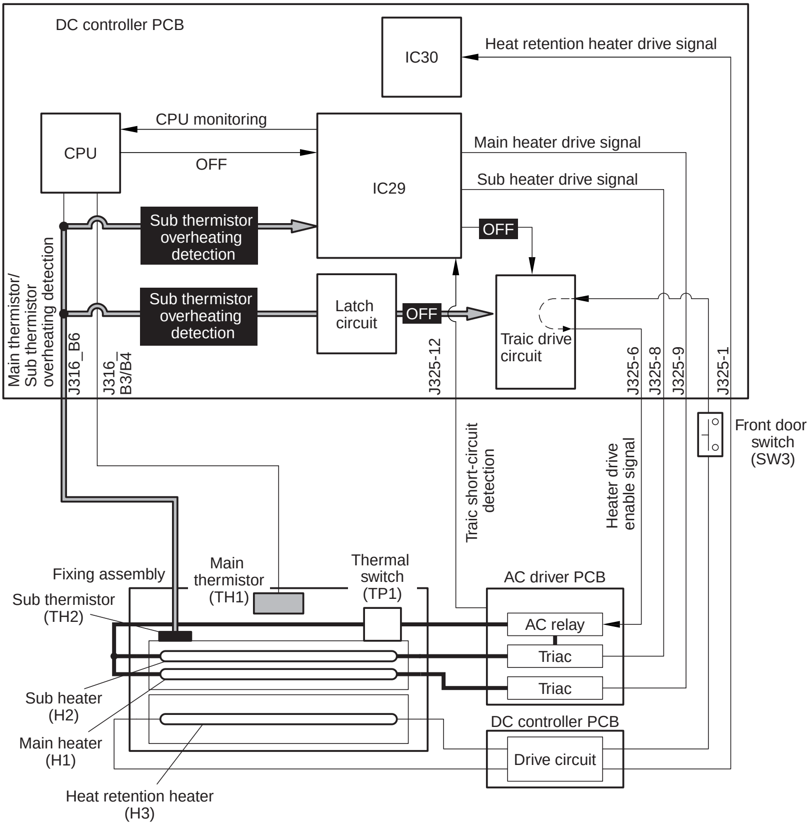
When the main thermistor (TH1) detects overheating, the CPU on the DC controller PCB turns off the triac drive circuit.
Moreover, if the CPU on the DC controller detects that the difference in readings between the main thermistor (TH1) and the sub thermistor (TH2) is more than specified, the CPU turns off the triac drive circuit.


DC controller PCB
IC30
Heat retention heater drive signal
CPU
CPU monitoring
OFF
IC29
Main heater drive signal
Sub heater drive signal
Sub thermistor overheating detection
Main thermistor overheating detection
Latch circuit
OFF
Triac drive circuit
Main thermistor/ Sub thermistor overheating detection
J316_B6
J316_ B3/B4
J325-12
J325-6
J325-8
J325-9
J325-1
Front door switch (SW3)
Main/sub thermistor overheating detection
Triac short-circuit detection
Heater drive enable signal
Fixing assembly
Main thermistor (TH1)
Thermal switch (TP1)
AC drive PCB
Sub thermistor (TH2)
AC relay
Triac
Triac
Sub heater (H2)
Main heater (H1)
Controller power supply PCB
Drive circuit
Heat retention heater (H3)

F-9-15

9.4.2 Detecting Overheating by the Sub Thermistor (TH2)

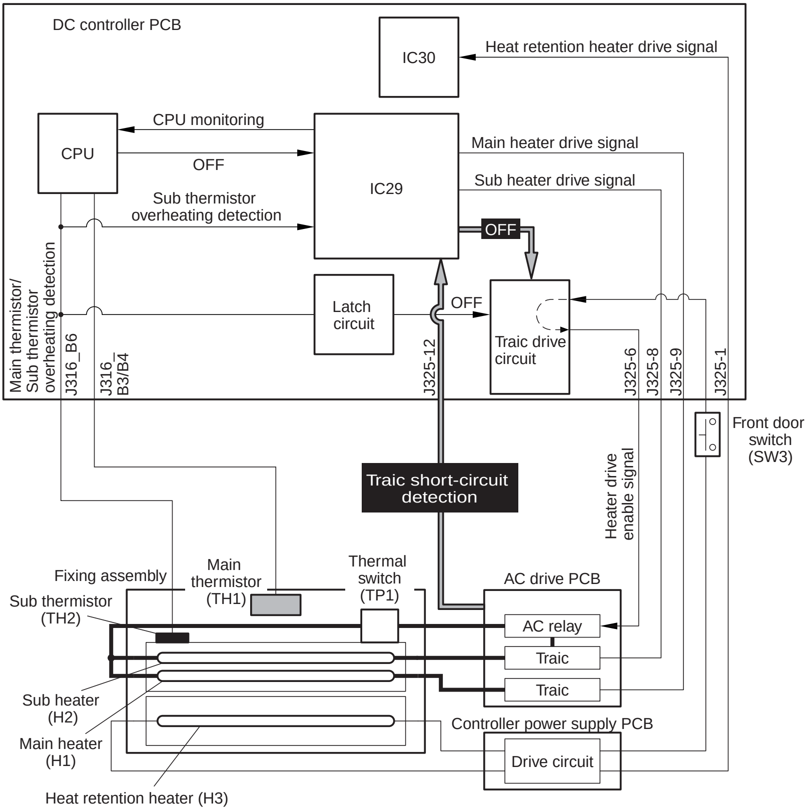
When the sub thermistor (TH2) detects overheating, the triac drive circuit of the DC controller PCB turns off the main heater/sub heater drive signal. Or, the latch circuit of the DC controller PCB turns off the heater drive enable signal to the triac drive circuit.


DC controller PCB
IC30
Heat retention heater drive signal
CPU
CPU monitoring
OFF
IC29
Main heater drive signal
Sub heater drive signal
Sub thermistor overheating detection
Sub thermistor overheating detection
OFF
Latch circuit
OFF
Traic drive circuit
Main thermistor/ Sub thermistor overheating detection
J316_B6
J316_B3/B4
J325-12
J325-6
J325-8
J325-9
J325-1
Front door switch (SW3)
Traic short-circuit detection
Heater drive enable signal
Fixing assembly
Main thermistor (TH1)
Thermal switch (TP1)
AC driver PCB
Sub thermistor (TH2)
AC relay
Triac
Triac
Sub heater (H2)
Main heater (H1)
DC controller PCB
Drive circuit
Heat retention heater (H3)

F-9-16

9.4.3 Detecting Overheating in Relation to a Triac Short-Circuit

When the AC drive detects a short circuit in the triac, the triac drive circuit on the DC controller PCB turns off the main heater/sub heater drive signal.


DC controller PCB
IC30
Heat retention heater drive signal
CPU
CPU monitoring
OFF
IC29
Main heater drive signal
Sub heater drive signal
Sub thermistor overheating detection
OFF
Latch circuit
OFF
Traic drive circuit
Main thermistor/ Sub thermistor overheating detection
J316_B6
J316_ B3/B4
J325-12
J325-6
J325-8
J325-9
J325-1
Front door switch (SW3)
Traic short-circuit detection
Heater drive enable signal
Fixing assembly
Main thermistor (TH1)
Thermal switch (TP1)
AC drive PCB
Sub thermistor (TH2)
AC relay
Traic
Traic
Sub heater (H2)
Main heater (H1)
Controller power supply PCB
Drive circuit
Heat retention heater (H3)

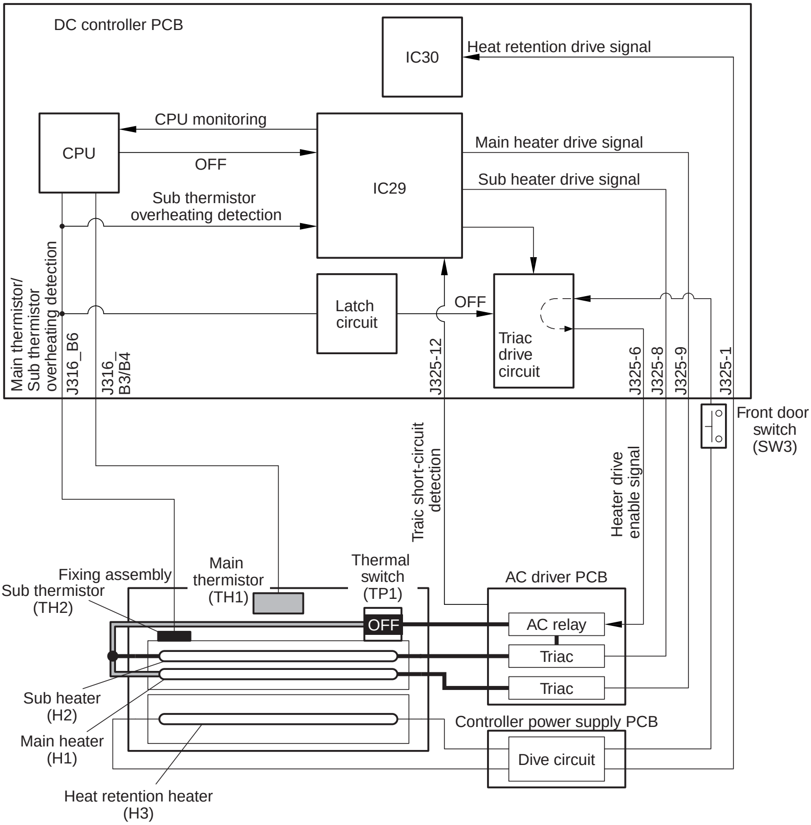
F-9-17

9.4.4 Detecting Overheating by the Thermal Switch (TP1)

When the thermal switch (TP1) reaches a specific temperature, it goes off to cut off the AC power line to the main heater and the sub heater.

Caution:

Once open, the contact of the thermal switch will not return to normal even after the temperature drops to its normal level. Remove the cause of the error that opened the contact, and be sure to replace the thermal switch with a new one.


DC controller PCB
IC30
Heat retention drive signal
CPU
CPU monitoring
OFF
IC29
Main heater drive signal
Sub heater drive signal
Sub thermistor overheating detection
Main thermistor/ Sub thermistor overheating detection
Latch circuit
OFF
Triac drive circuit
J316_B6
J316_ B3/B4
J325-12
J325-6
J325-8
J325-9
J325-1
Front door switch (SW3)
Traic short-circuit detection
Heater drive enable signal
Fixing assembly
Sub thermistor (TH2)
Main thermistor (TH1)
Thermal switch (TP1)
OFF
AC driver PCB
AC relay
Triac
Triac
Controller power supply PCB
Dive circuit
Sub heater (H2)
Main heater (H1)
Heat retention heater (H3)

F-9-18

9.4.5 Detecting Overheating of the Heat Retention Heater (H3)

The machine does not monitor the heat retention heater (H3) for overheating, and there is no mechanism to turn off the power to the heat retention heater.

9.4.6 Error

Related Error

E000

The main thermistor (TH1) has an open circuit or has poor contact. The sub thermistor (TH2) has an open circuit or poor contact. The thermal switch (TP1) has an open circuit. The main heater (H1)/sub heater (H2) has an open circuit. The AC drive PCB is faulty. The DC controller PCB is faulty. The door switch (SW3) is faulty.

E0001

The main thermistor (TH1) is faulty. The sub thermistor (TH2) is faulty. The AC driver PCB is faulty. The DC controller PCB is faulty.

E003

The sub thermistor (TH2) has an open circuit or has poor contact. The thermal switch (TP1) has an open circuit. The main heater (H1)/sub heater (H2) has an open circuit. The AC drive PCB is faulty. The DC controller PCB is faulty. The door switch (SW3) is faulty.

E004

The main thermistor (TH1) has an open circuit or has poor contact. The sub thermistor (TH2) has an open circuit or has poor contact. The thermal switch (TGP1) has an open circuit. The main heater (H1)/sub heater (H2) has an open circuit. The AC driver PCB is faulty. The DC controller PCB is faulty.

E008

The fixing upper roller counter reading has reached its upper limit (180,000 counts: if smaller than B4, 1 count; if B4 or larger, 2 counts).

E014

The fixing motor (M11) has an open circuit or has poor contact. The DC controller PCB is faulty.

Note 1:

If the machine indicates E000 through E003, it will not reset the error when its main power switch is turned off and then on, requiring you to execute the following service mode item: COPIER>FUNCTION>CLER>ERR.

Note 2:
If the machine suffers an error because the fixing upper roller count has reached its upper limit, be sure to replace the fixing assembly or the fixing upper roller, and then execute the following service mode item: COPIER>COUNTER>MISC>FX-UP-RL.

Note 3:
If you have replaced the DC controller PCB or initialized the RAM on the DC controller, be sure to enter the reading you noted before the replacement or initialization in the following service mode item: COPIER >COUNTER>MISC>FX-UP-RL.

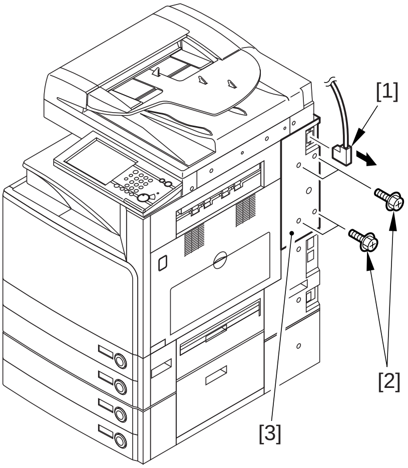
Note 4:
The machine indicates a warning when the reading of the fixing upper roller counter reaches 100,000.

9.5 Parts Replacement Procedure

9.5.1 Fixing Unit

9.5.1.1 Removing the Right Cover (upper rear)

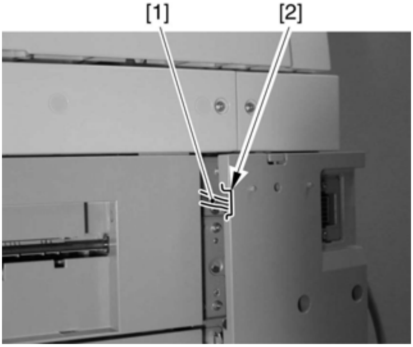
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-19

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

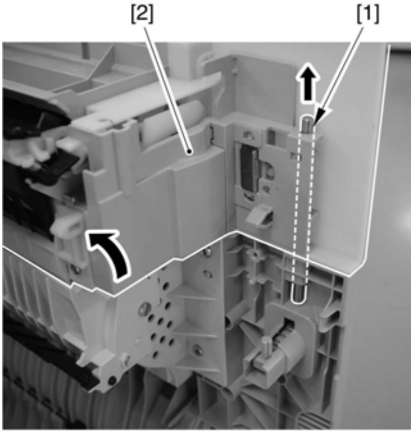
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-9-20

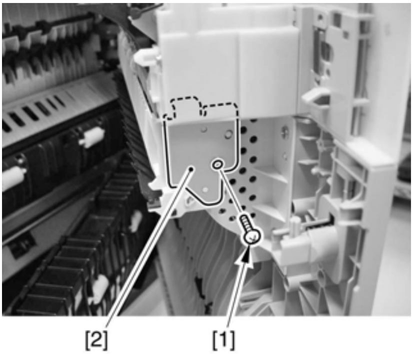
9.5.1.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-21

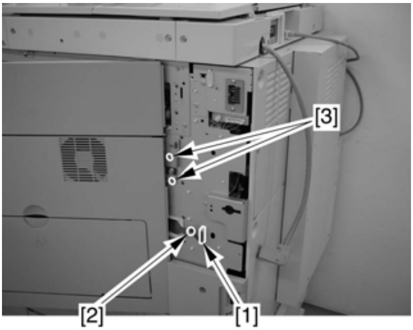
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-22

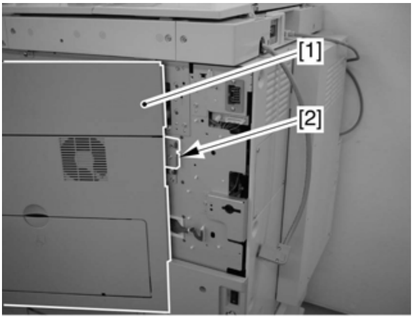
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-23

6) Detach the right door [1] together with the hinge [2].

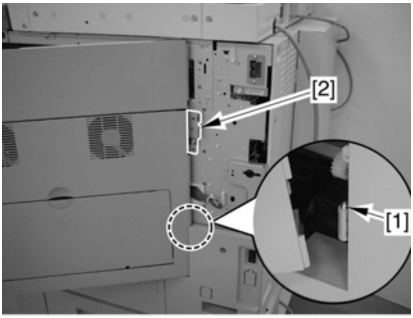


F-9-24

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

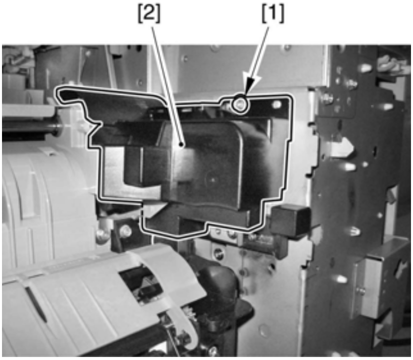


F-9-25

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

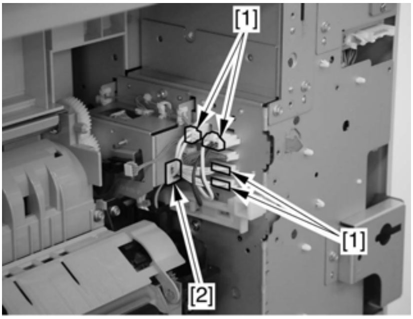
9.5.1.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



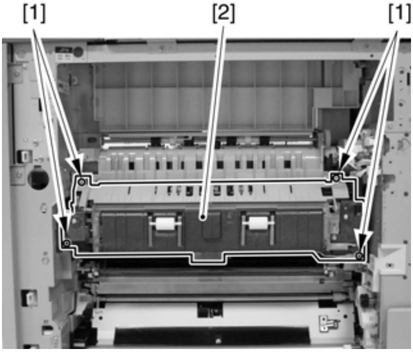
F-9-26

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-27

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-28

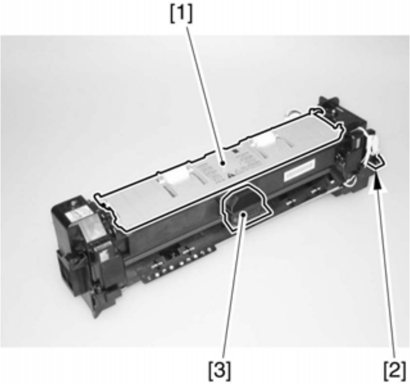
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-9-29

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

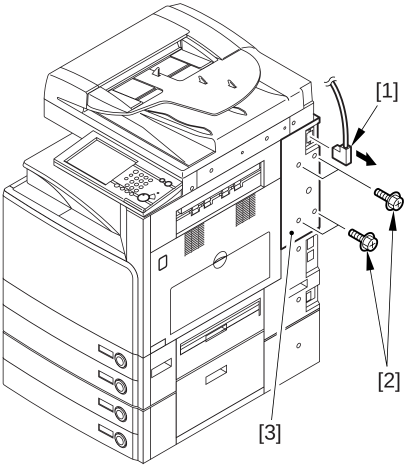
COPIER> COUNTER> MISC> FX-UP-RL

9.5.2 Fixing Upper Frame

9.5.2.1 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

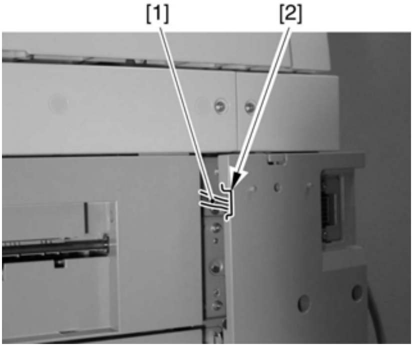
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-30

⚠**Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)**

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

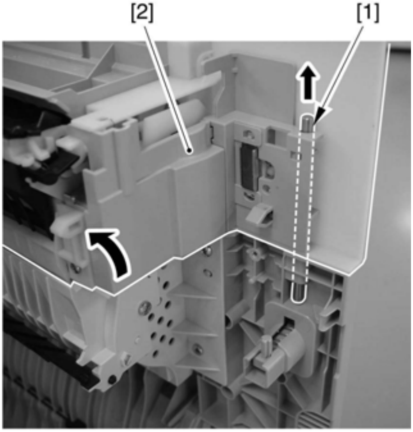


F-9-31

9.5.2.2 Removing the Right Door

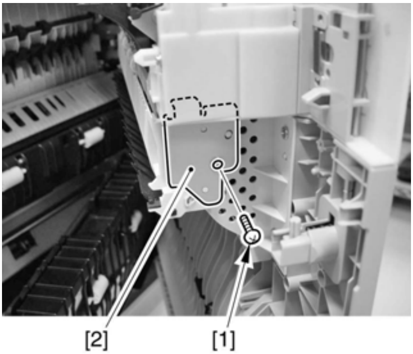
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-32

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.

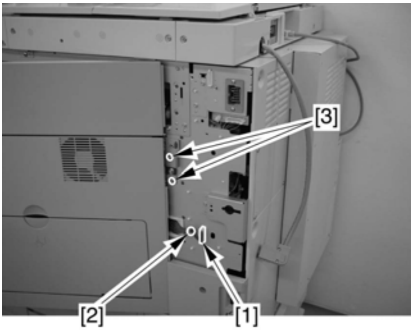


F-9-33

4) Disconnect the connector [1], and remove the clamp [2].

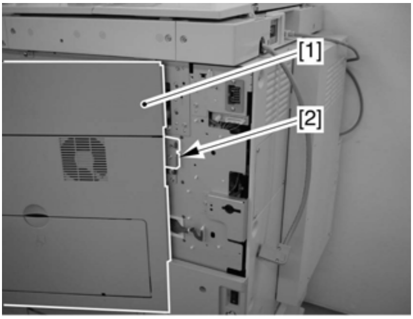
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-9-34

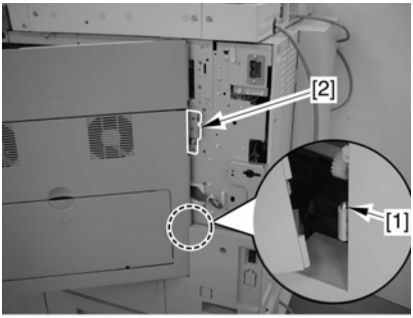
6) Detach the right door [1] together with the hinge [2].



F-9-35

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

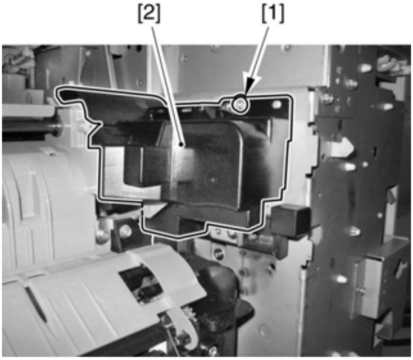


F-9-36

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

9.5.2.3 Removing the Fixing Unit

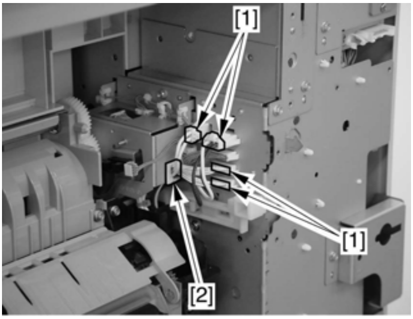
1) Remove the screw [1], and detach the connector cover [2].



F-9-37

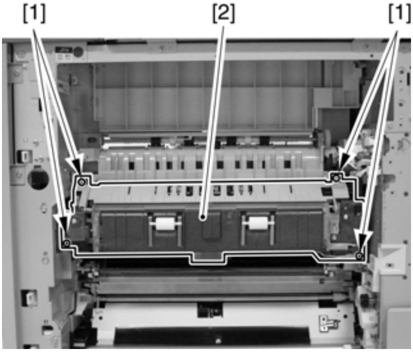
2) Disconnect the 4 connectors [1], and

free the fixing harness from the clamp [2].



F-9-38

3) Remove the 4 screws [1], and detach the fixing assembly [2].

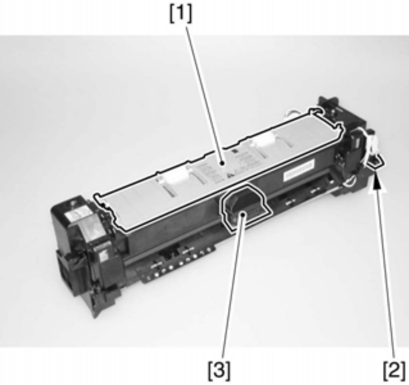


F-9-39

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward. Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-9-40

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

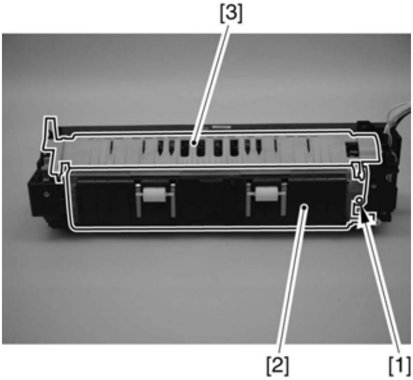
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

9.5.2.4 Removing the Fixing Inlet Guide

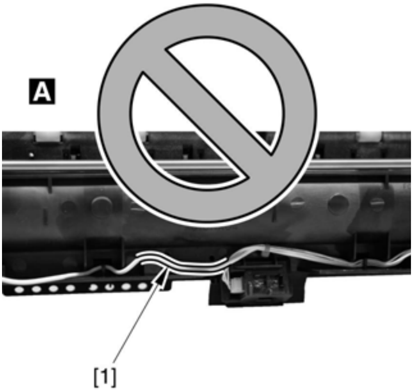
1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



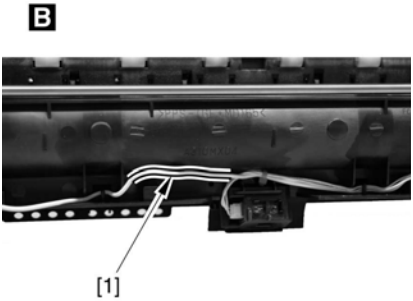
F-9-41

⚠Routing the Harness (before re-mounting the duplex/feed guide)

Be sure that the cable to the fixing heat retaining heater (H3) is NOT in the path indicated in Figure A. It must be routed in the path indicated in Figure B; otherwise, it can become trapped by the duplex/feed guide.



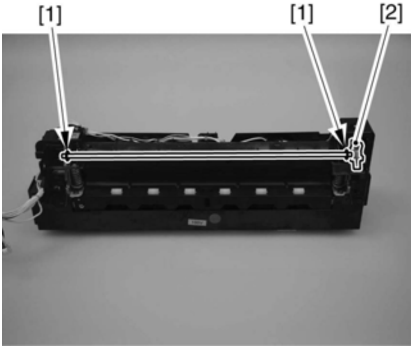
F-9-42



F-9-43

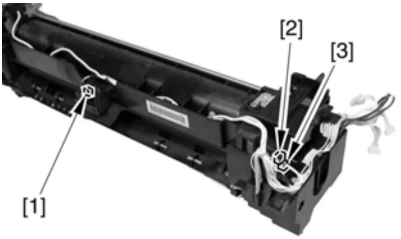
---

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



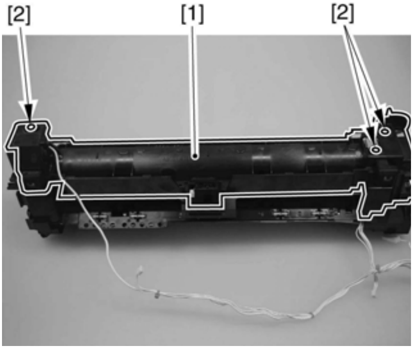
F-9-44

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



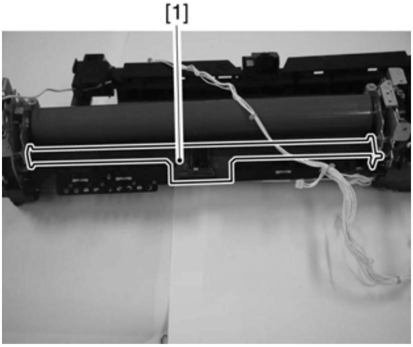
F-9-45

4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-46

5) Remove the fixing inlet guide [1].

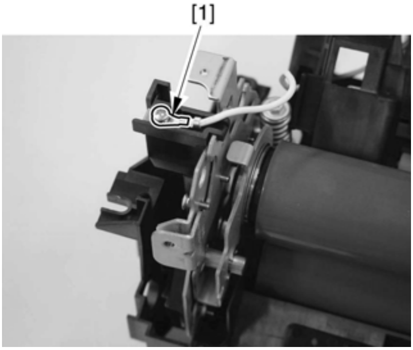


F-9-47

9.5.2.5 Removing the Fixing Roller

1) Remove the screw, and detach the round terminal [1] connected to the heat retention heater.

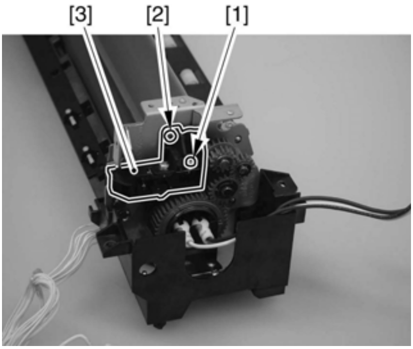
⚠Keep in mind that the screw used to fix the round terminal connected to the heat retention heater is equipped with a washer.



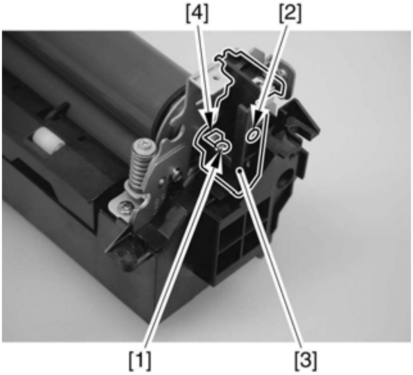
F-9-48

2) Remove the 2 screws [1], and detach the terminal; then, remove the 2 screws [2], and detach the heater base (front/rear) [3]. Thereafter, detach the heat retention heater [4].

⚠Keep in mind that the screw used to fix the heat retention heater in place is equipped with a washer.

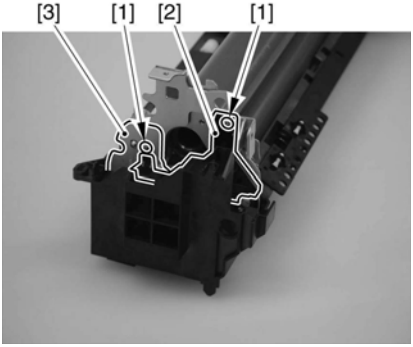


F-9-49



F-9-50

3) Remove the 2 screws [1], and detach the bearing retainer (front) [3] and the cover [2].



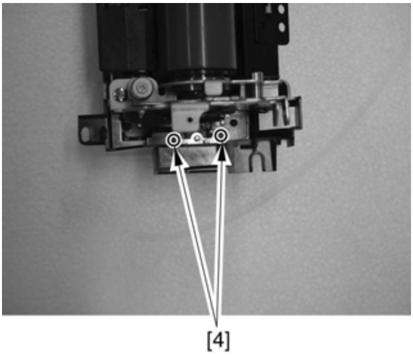
F-9-51

4) Remove the 2 screws [2], and detach the heater retainer [1]; then, detach the round terminal [3], remove the 2 heater retaining screws [4], and detach the main/sub heater [5].

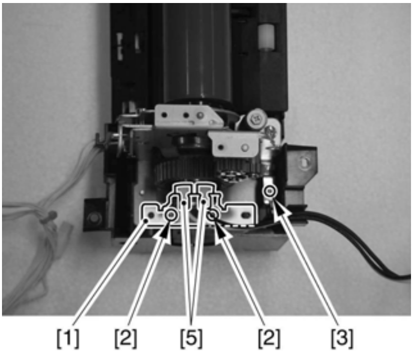
⚠The following screws are equipped

with a washer:

- 2 screws used to fix the heater retainer in place [1]
- screw [3] used to fix the round terminal in place
- screw [4] used to retain the heater in place



F-9-52



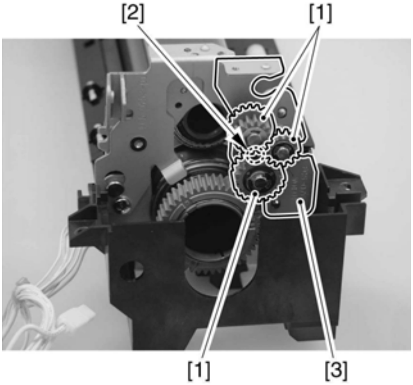
F-9-53

Memo:

The fixing main heater can be identified by its white cable, and it is located on the pickup side. The fixing sub heater can be identified by the black cable, and it is located on the pickup side.

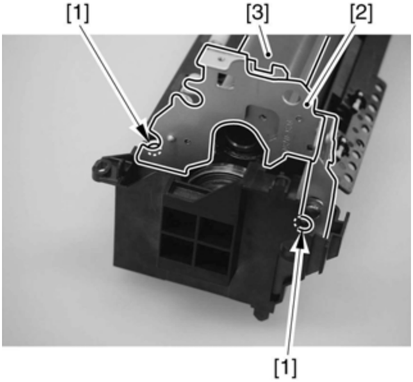
5) Remove the 3 E-rings, and detach the 3 gears [1].

6) Remove the 2 screws [2], and detach the bearing retainer (rear) [3].



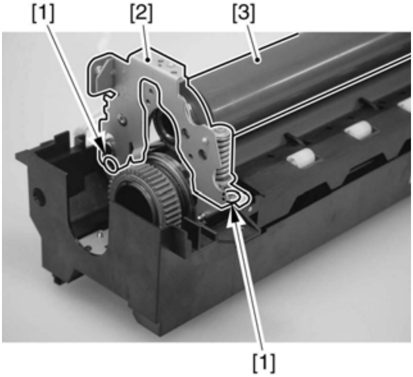
F-9-54

7) Remove the 2 screws (M5) [1], and detach the pressure unit (front) [2].



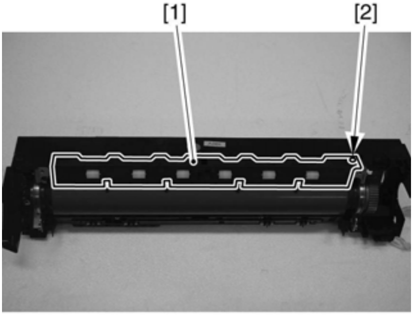
F-9-55

8) Remove the 2 screws (M5) [1], and detach the pressure unit (rear) [2]; then, detach the fixing pressure roller [3].



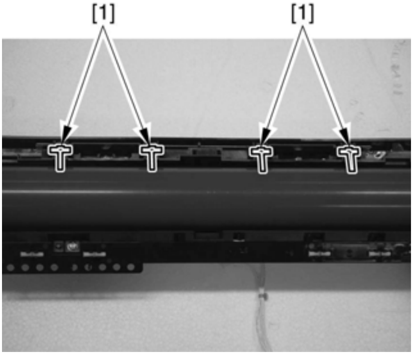
F-9-56

9) Remove the screw [2], and detach the delivery guide [1].



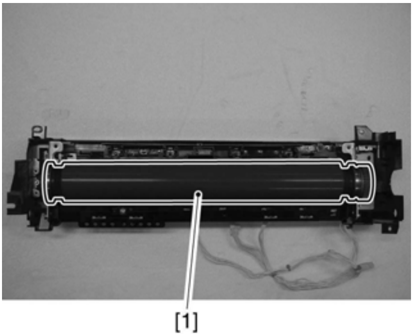
F-9-57

10) Free the 4 separation claws [1].



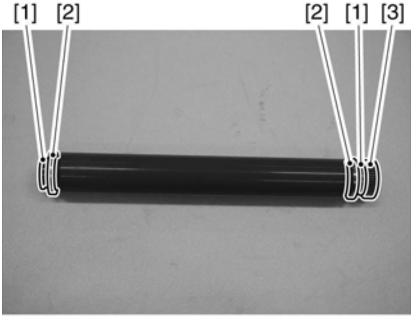
F-9-58

11) Remove the fixing roller [1].



F-9-59

16) From the fixing roller, detach the 2 bushings [1], and 2 bearings [2], and gear [3]. (C-ring; 1 pc. each on both ends)



F-9-60

⚠

1. If you have replaced the fixing roller, be sure to initialize the service mode counter using the following service mode:

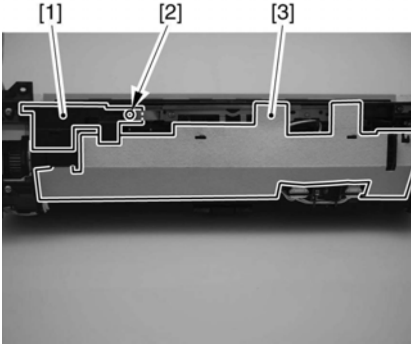
   COPIER> COUNTER> MISC> FX-UP-RL

2. If you have replaced the fixing roller with a used one, be sure to enter the counter reading of the used fixing roller using the following service mode item:

   COPIER> COUNTER> MISC> FX-UP-RL

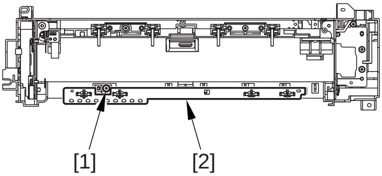
9.5.2.6 Removing the Fixing Upper Frame

1) Remove the insulating sheet retainer [1]; then, remove the screw [2], and detach the heat insulating sheet [3].



F-9-61

2) Remove the screw [1], and detach the spur unit [2].



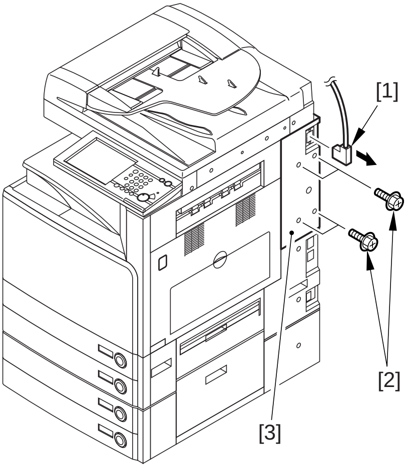
F-9-62

9.5.3 Fixing Roller

9.5.3.1 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

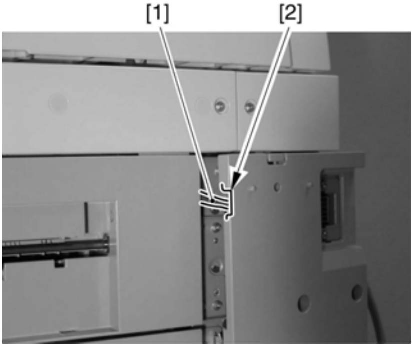
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-63

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

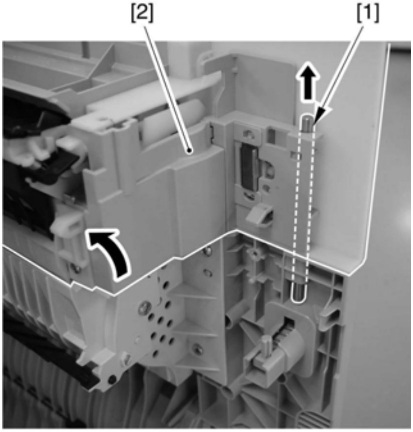


F-9-64

9.5.3.2 Removing the Right Door

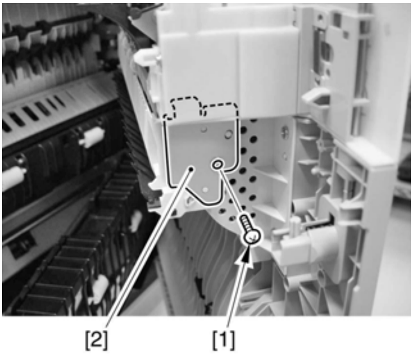
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-65

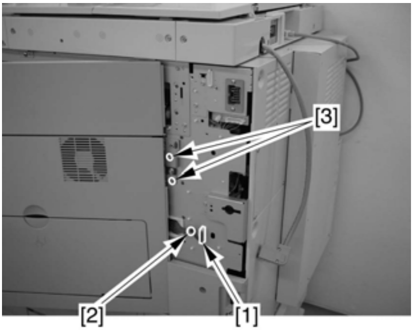
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-66

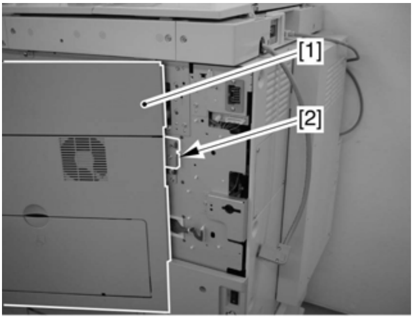
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-67

6) Detach the right door [1] together with the hinge [2].

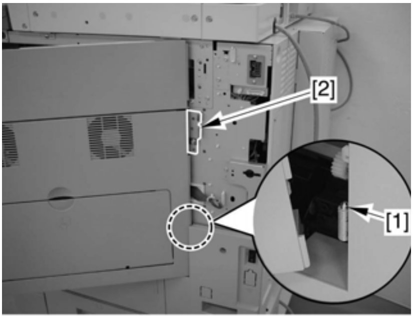


F-9-68

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

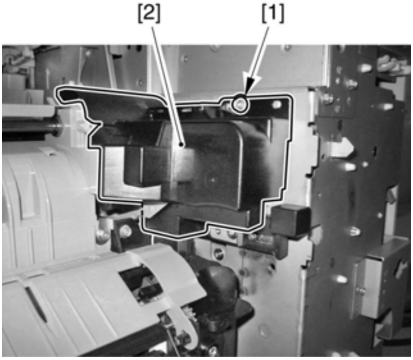


F-9-69

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

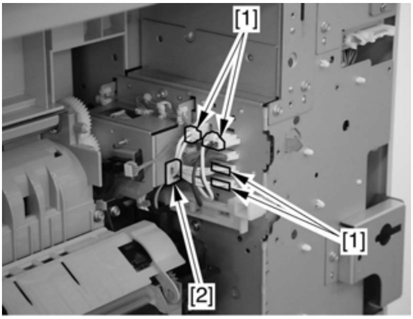
9.5.3.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



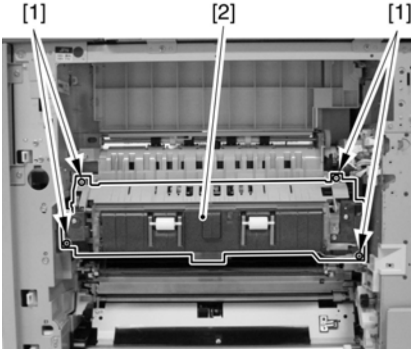
F-9-70

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-71

3) Remove the 4 screws [1], and detach the fixing assembly [2].



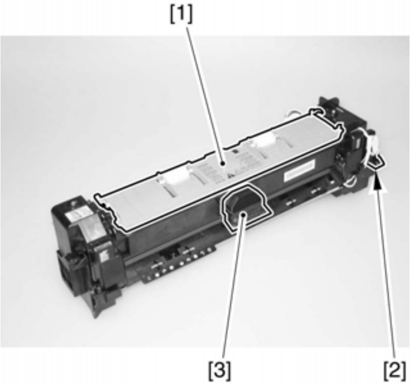
F-9-72

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

Placing the Fixing Assembly

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-9-73

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

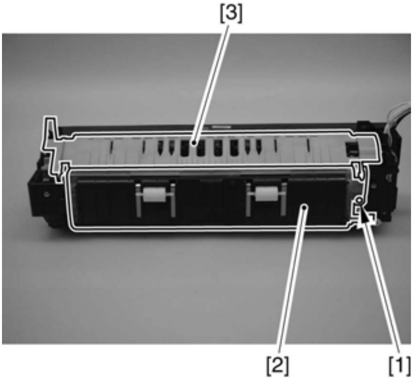
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

9.5.3.4 Removing the Fixing Inlet Guide

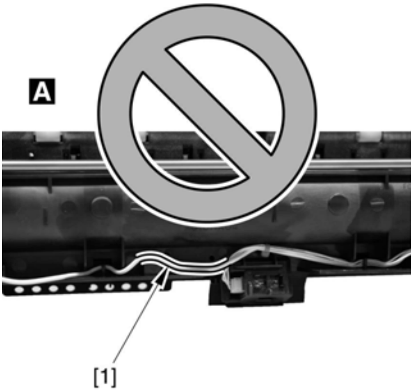
1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



F-9-74

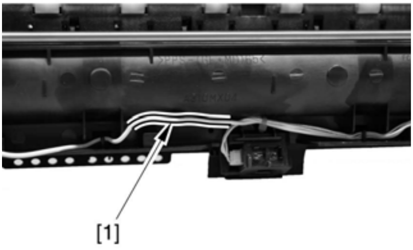
⚠**Routing the Harness (before re-mounting the duplex/feed guide)**

Be sure that the cable to the fixing heat retaining heater (H3) is NOT in the path indicated in Figure A. It must be routed in the path indicated in Figure B; otherwise, it can become trapped by the duplex/feed guide.



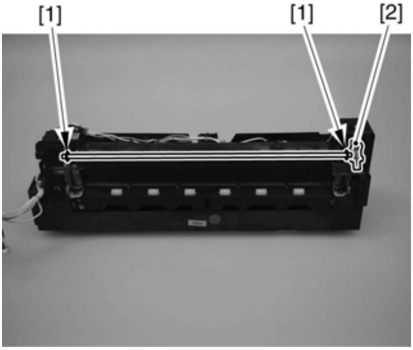
F-9-75

B



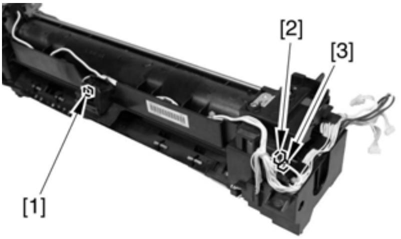
F-9-76

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



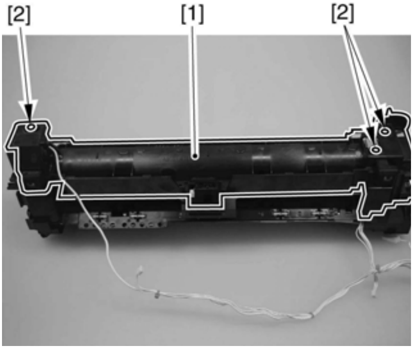
F-9-77

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



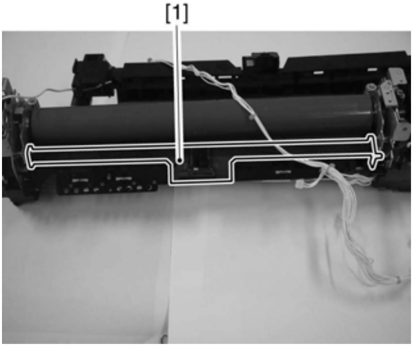
F-9-78

4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-79

5) Remove the fixing inlet guide [1].

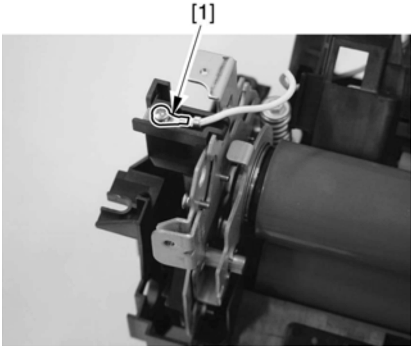


F-9-80

9.5.3.5 Removing the Fixing Roller

1) Remove the screw, and detach the round terminal [1] connected to the heat retention heater.

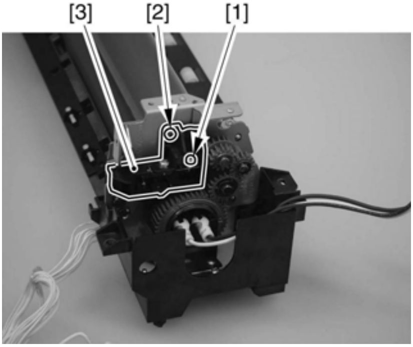
⚠Keep in mind that the screw used to fix the round terminal connected to the heat retention heater is equipped with a washer.



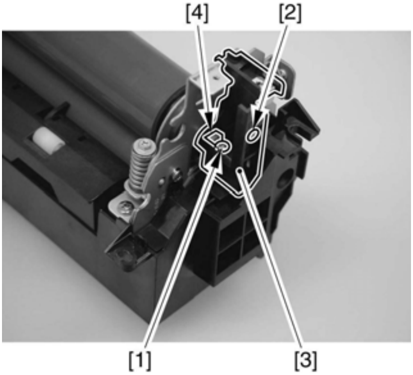
F-9-81

2) Remove the 2 screws [1], and detach the terminal; then, remove the 2 screws [2], and detach the heater base (front/rear) [3]. Thereafter, detach the heat retention heater [4].

⚠Keep in mind that the screw used to fix the heat retention heater in place is equipped with a washer.



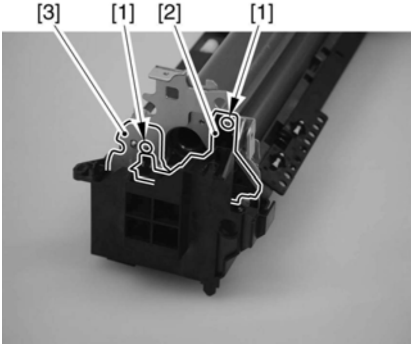
F-9-82



F-9-83

3) Remove the 2 screws [1], and detach the

bearing retainer (front) [3] and the cover [2].

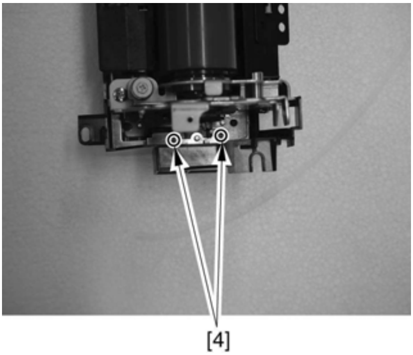


F-9-84

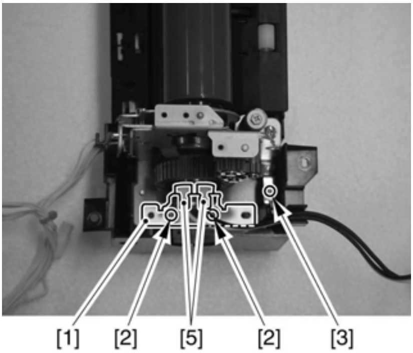
4) Remove the 2 screws [2], and detach the heater retainer [1]; then, detach the round terminal [3], remove the 2 heater retaining screws [4], and detach the main/sub heater [5].

⚠The following screws are equipped with a washer:

- 2 screws used to fix the heater retainer in place [1]
- screw [3] used to fix the round terminal in place
- screw [4] used to retain the heater in place



F-9-85

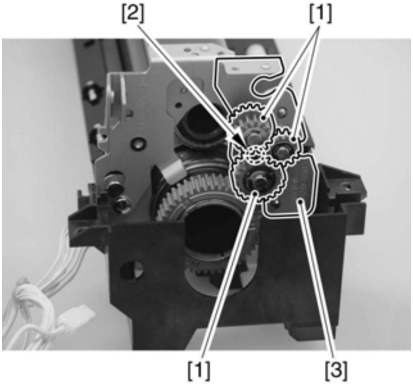


F-9-86

Memo:
The fixing main heater can be identified by its white cable, and it is located on the pickup side. The fixing sub heater can be identified by the black cable, and it is located on the pickup side.

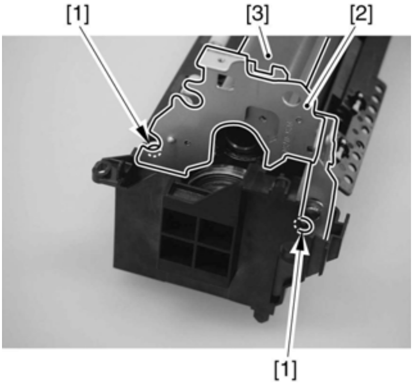
5) Remove the 3 E-rings, and detach the 3 gears [1].

6) Remove the 2 screws [2], and detach the bearing retainer (rear) [3].



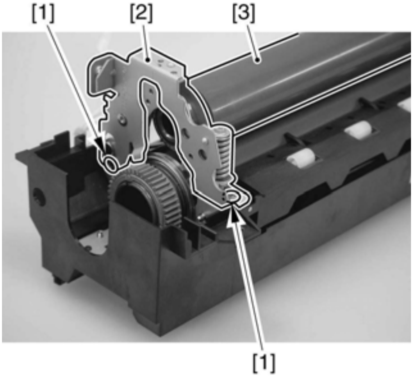
F-9-87

7) Remove the 2 screws (M5) [1], and detach the pressure unit (front) [2].



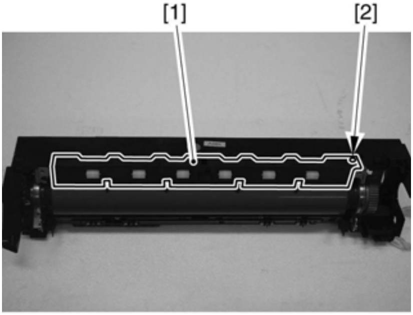
F-9-88

8) Remove the 2 screws (M5) [1], and detach the pressure unit (rear) [2]; then, detach the fixing pressure roller [3].



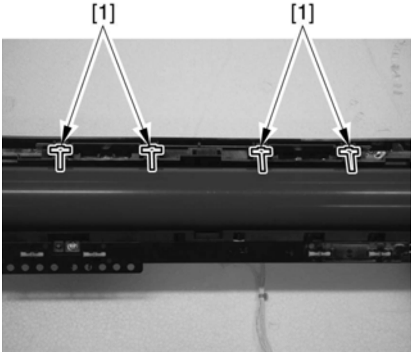
F-9-89

9) Remove the screw [2], and detach the delivery guide [1].



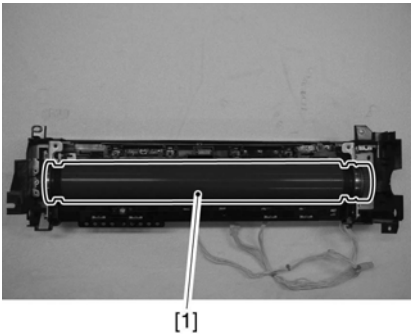
F-9-90

10) Free the 4 separation claws [1].



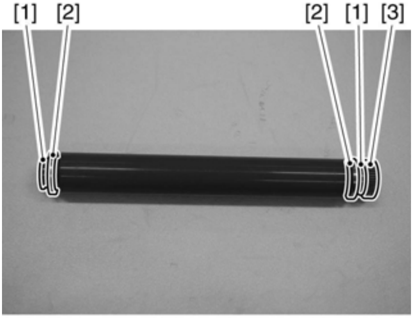
F-9-91

11) Remove the fixing roller [1].



F-9-92

16) From the fixing roller, detach the 2 bushings [1], and 2 bearings [2], and gear [3]. (C-ring; 1 pc. each on both ends)



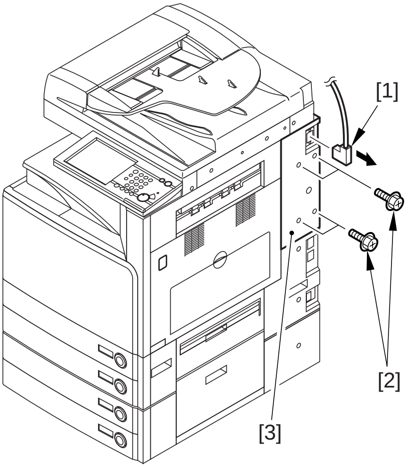
F-9-93

1. If you have replaced the fixing roller, be sure to initialize the service mode counter using the following service mode:
   COPIER> COUNTER> MISC> FX-UP-RL
2. If you have replaced the fixing roller with a used one, be sure to enter the counter reading of the used fixing roller using the following service mode item:
   COPIER> COUNTER> MISC> FX-UP-RL

9.5.4 Pressure Roller

9.5.4.1 Removing the Right Cover (upper rear)

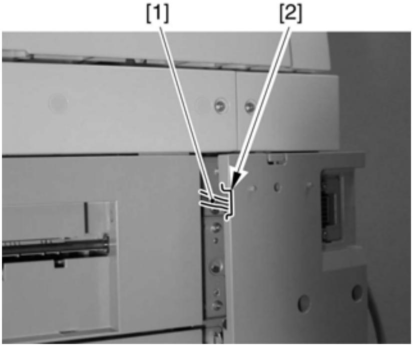
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-94

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

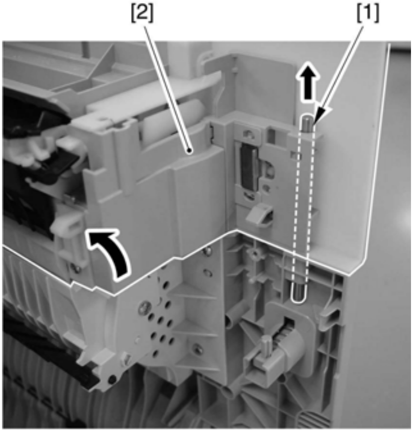
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-9-95

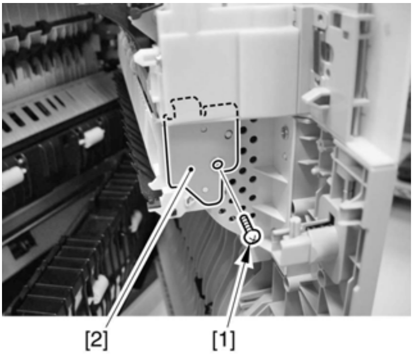
9.5.4.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-96

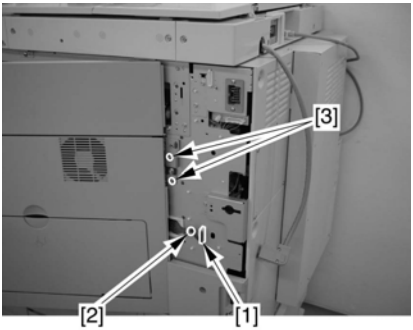
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-97

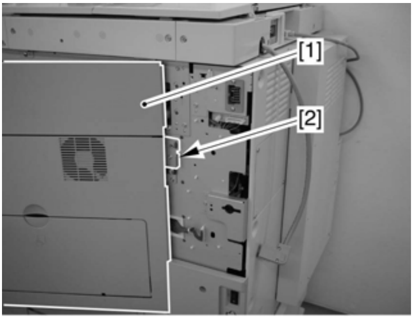
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-98

6) Detach the right door [1] together with the hinge [2].

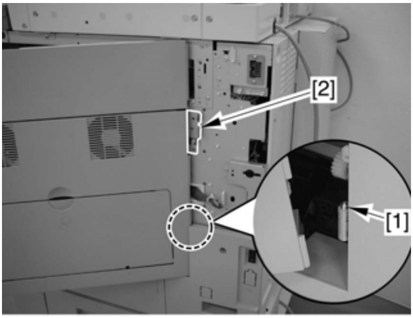


F-9-99

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

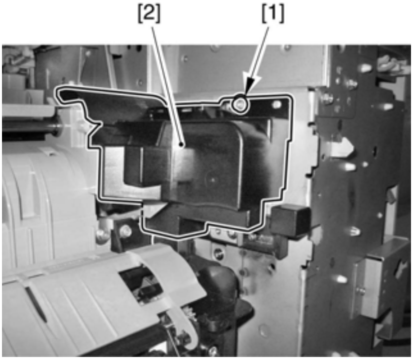


F-9-100

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

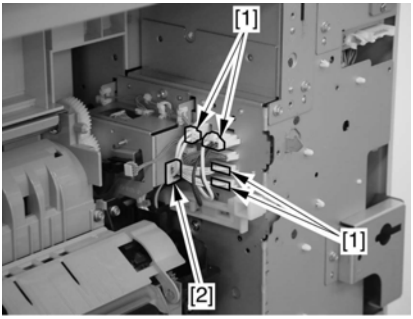
9.5.4.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



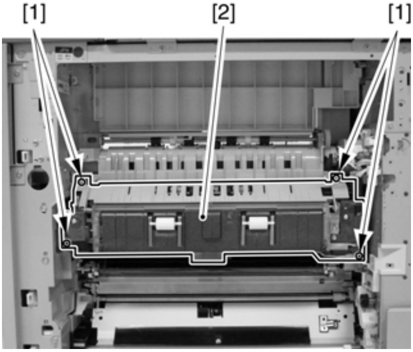
F-9-101

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-102

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-103

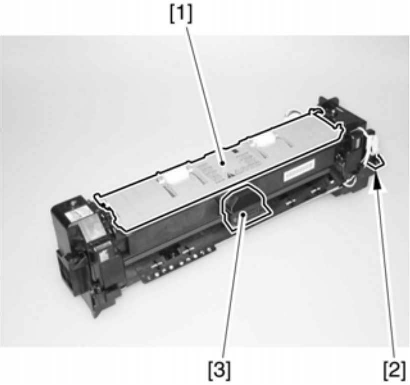
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-9-104

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

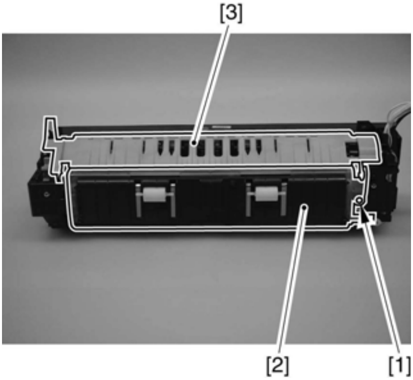
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

9.5.4.4 Removing the Fixing Pressure Roller

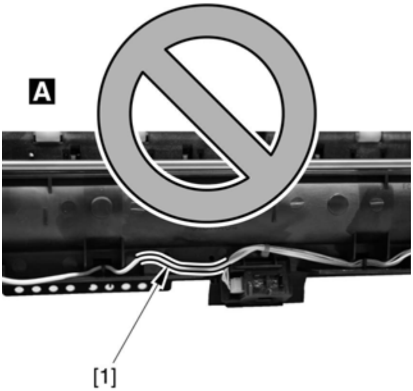
1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



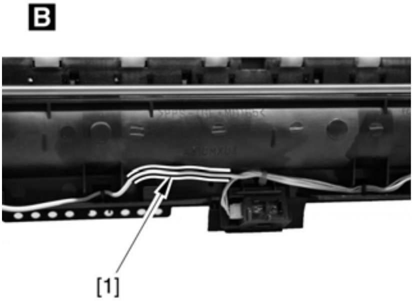
F-9-105

⚠**Routing the Harness (before re-mounting the duplex/feed guide)**

Be sure that the cable to the fixing heat retaining heater (H3) is NOT in the path indicated in Figure A. It must be routed in the path indicated in Figure B; otherwise, it can become trapped by the duplex/feed guide.



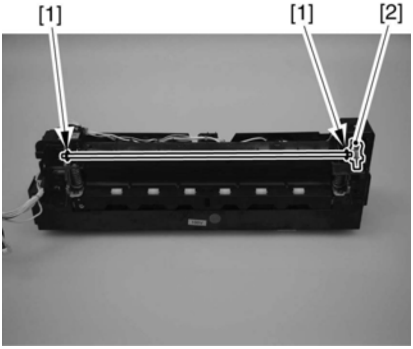
F-9-106



F-9-107

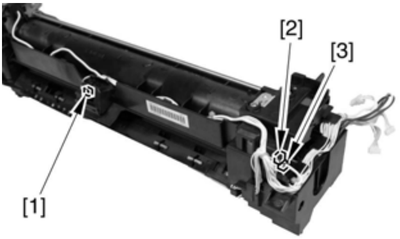
---

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



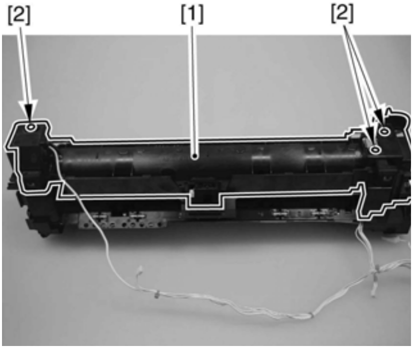
F-9-108

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



F-9-109

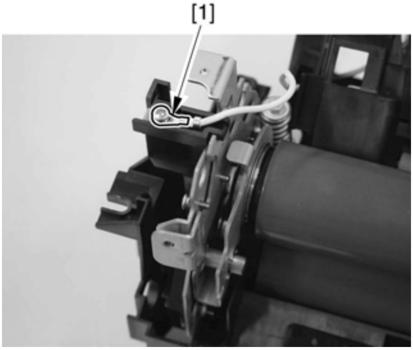
4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-110

5) Remove the round terminal [1] connected to the heat retention heater.

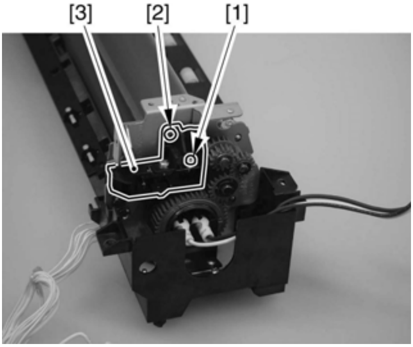
⚠Keep in mind that the screw used to fix the round terminal connected to the heat retention heater is equipped with a washer.



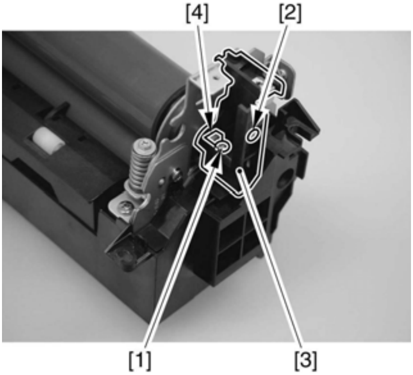
F-9-111

6) Remove the 2 screws, and detach the terminal; then, remove the 2 screws [2], and detach the heater base (front, rear) [3]. Thereafter, detach the heat retention heater.

⚠Keep in mind that the screw used to fix the heat retention heater in place is equipped with a washer.

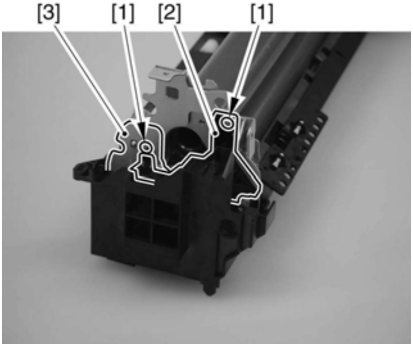


F-9-112



F-9-113

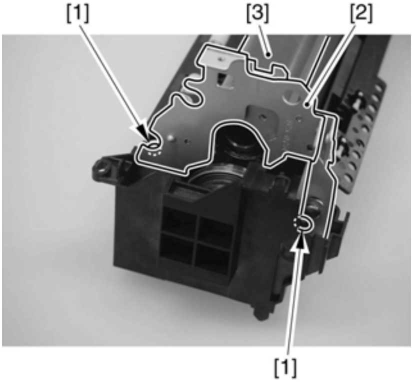
7) Remove the 2 screws [1], and detach the cover [2] and the bearing retainer (front) [3].



F-9-114

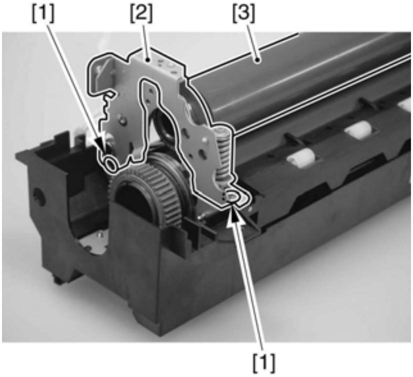
8) Remove the 3 gears [1] and the screw [2]; then, detach the bearing retainer (rear) [3].

9) Remove the 2 screws (M5) [3], and detach the pressure unit (front) [2].



F-9-115

10) Remove the 2 screws (M5) [1], and detach the pressure unit (rear) [2]; then, detach the fixing pressure roller [3].



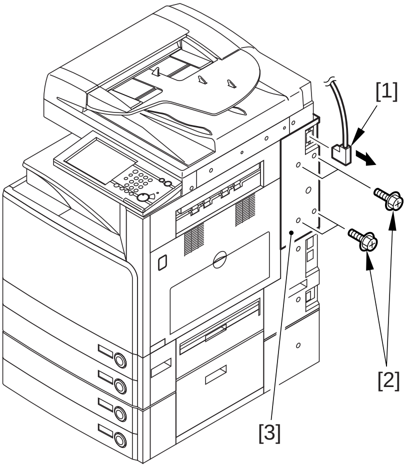
F-9-116

9.5.5 Fixing Main Thermistor

9.5.5.1 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

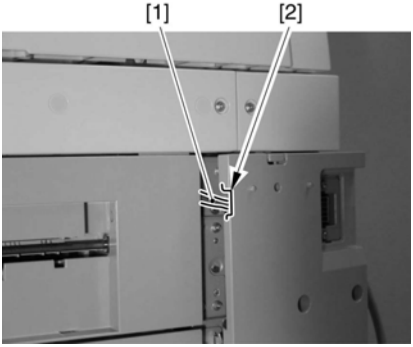
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-117

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

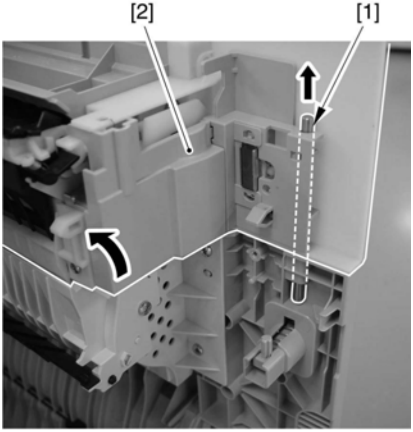


F-9-118

9.5.5.2 Removing the Right Door

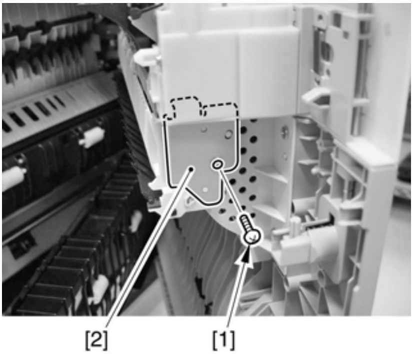
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-119

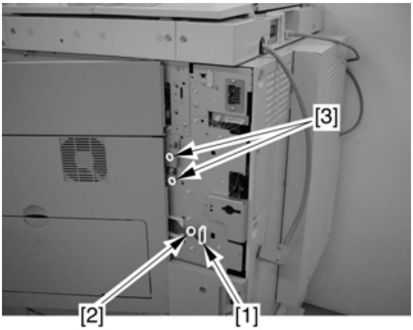
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-120

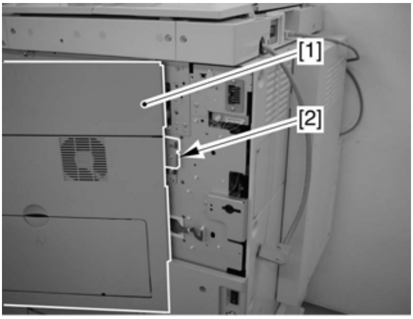
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-121

6) Detach the right door [1] together with the hinge [2].

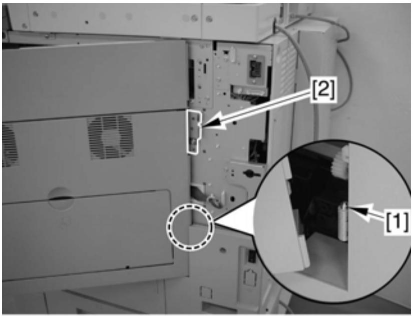


F-9-122

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

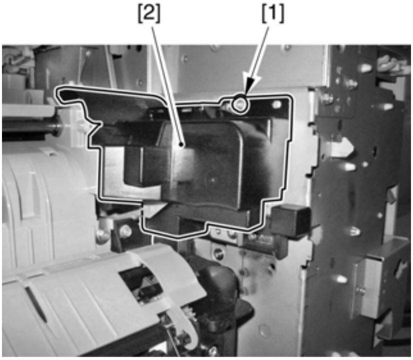


F-9-123

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

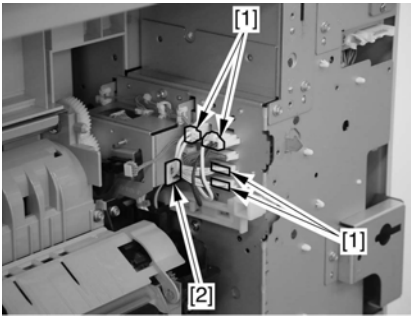
9.5.5.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



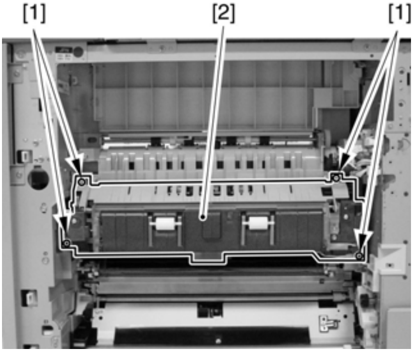
F-9-124

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-125

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-126

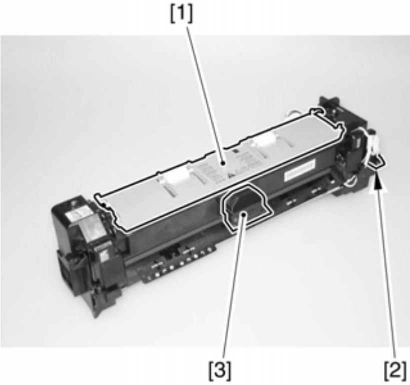
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-9-127

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

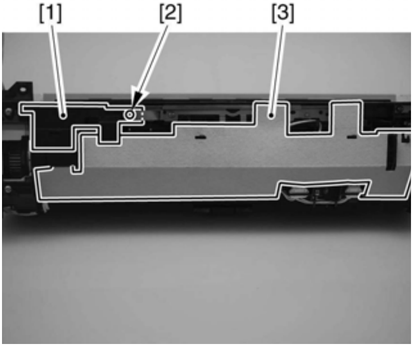
COPIER> COUNTER> MISC> FX-UP-RL

9.5.5.4 Removing the Fixing Main Thermistor

1) Remove the screw [2], and detach the heat insulating sheet retainer [1]; then, detach the heat insulating sheet [3].

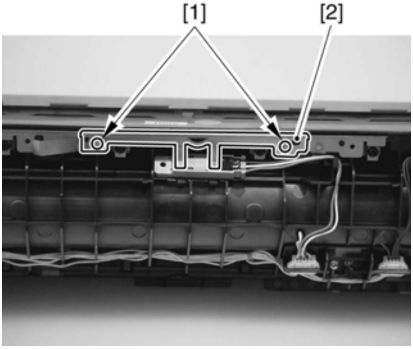
Memo:

The following figure shows the back of the fixing assembly.



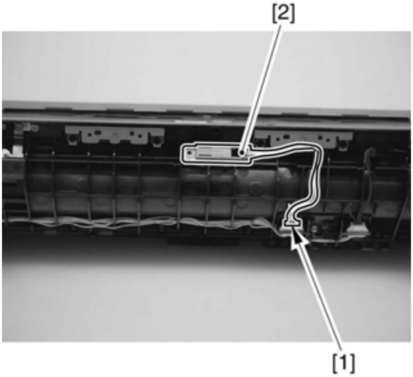
F-9-128

2) Remove the 2 screws [1], and detach the thermistor retainer [2].



F-9-129

3) Disconnect the connector [1], and detach the fixing main thermistor [2].



F-9-130

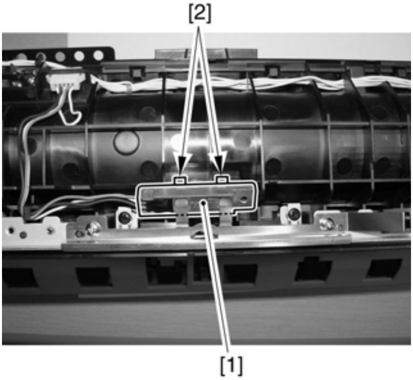
9.5.5.5 Point to Note About the Position of the Fixing Main Thermistor

⚠Caution 1

Check to be sure that the thermistor cover [2] is fitted under the fixing main thermistor [1].

⚠Caution 2

Check to be sure that the thermistor cover [2] is not mounted in the wrong orientation. The cover is equipped with a protrusion to prevent wrong orientation.



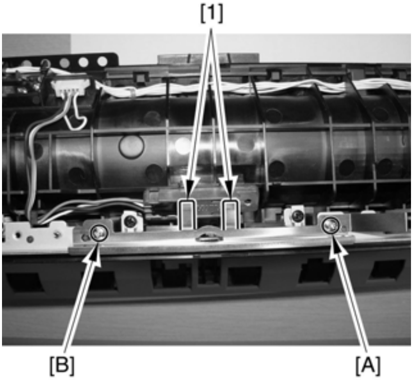
F-9-131

⚠Caution 3

Check to be sure that the spring [1] of the thermistor retainer is found forcing the thermistor.

⚠Caution 4

Be sure to tighten the screw A and then the screw B of the thermistor retainer in sequence.



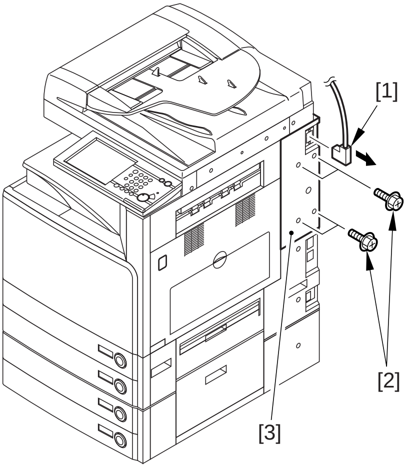
F-9-132

9.5.6 Fixing Sub Thermistor

9.5.6.1 Removing the Right Cover (upper rear)

1) Disconnect the power cable [1] from the printer unit.

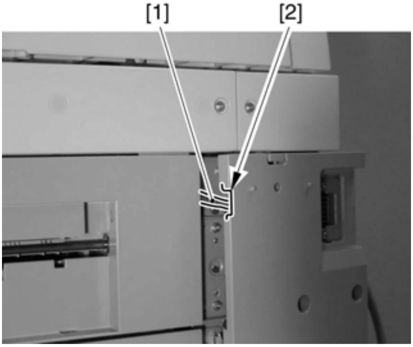
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-133

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

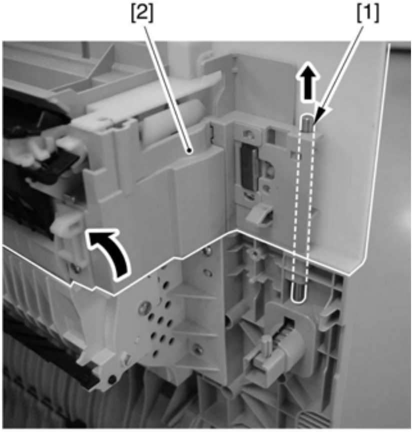


F-9-134

9.5.6.2 Removing the Right Door

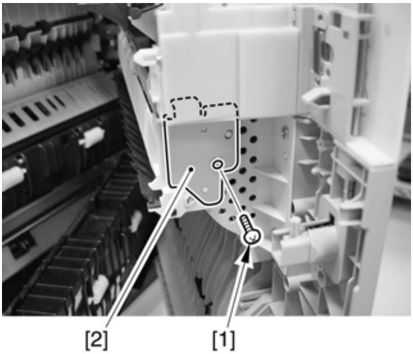
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-135

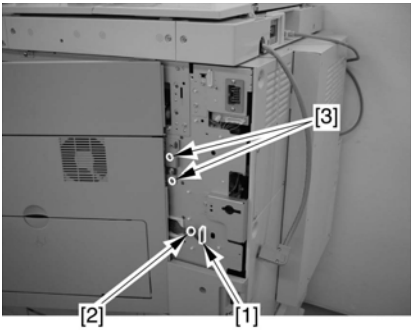
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-136

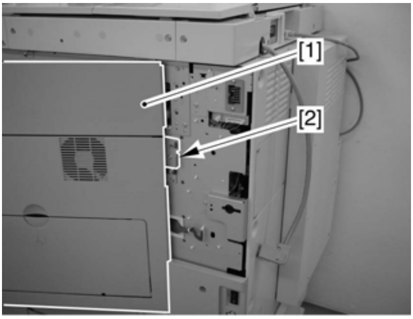
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-137

6) Detach the right door [1] together with the hinge [2].

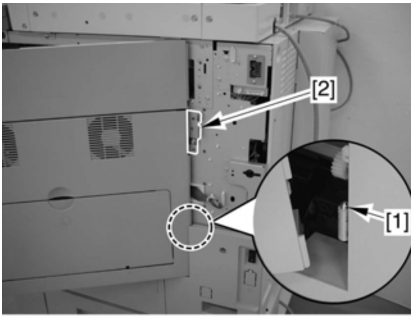


F-9-138

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

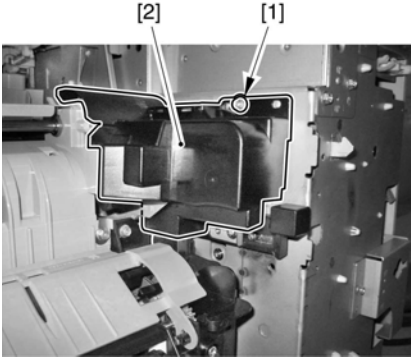


F-9-139

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

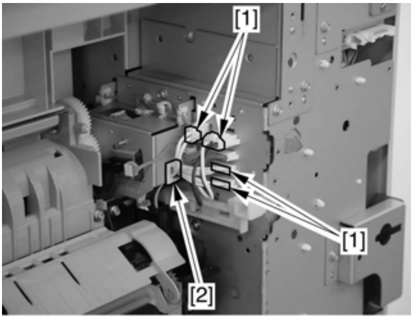
9.5.6.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



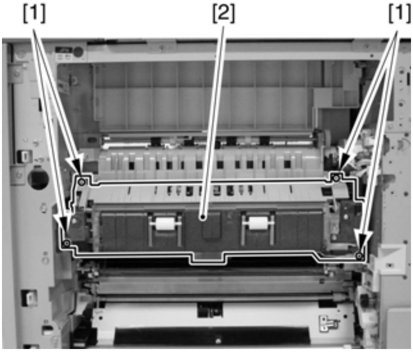
F-9-140

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-141

3) Remove the 4 screws [1], and detach the fixing assembly [2].

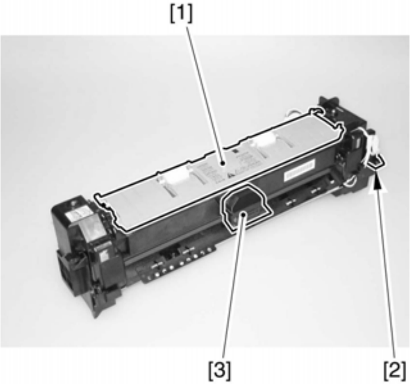


F-9-142

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**
If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-9-143

⚠ 1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

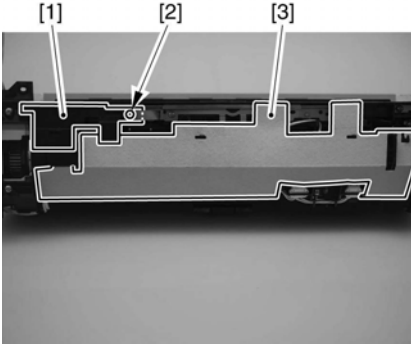
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

9.5.6.4 Removing the Fixing Sub Thermistor

1) Remove the screw [2], and detach the heat insulating sheet retainer [1]; then, detach the heat insulting sheet [3].

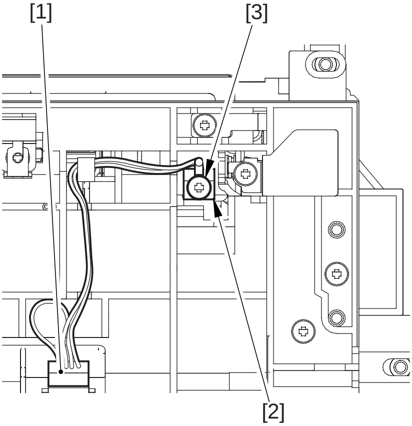
Memo:

The following figure shows the back of the fixing assembly:



F-9-144

2) Disconnect the connector [1], and detach the fixing sub thermistor [2]. (1 12-mm long screw [3])



F-9-145

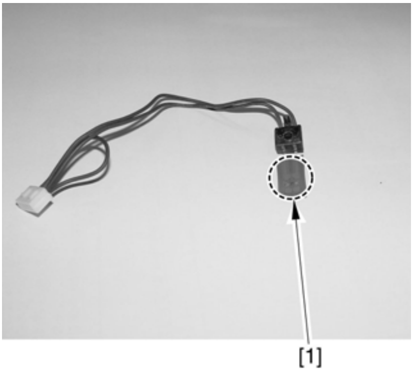
9.5.6.5 Point to Note When Mounting the Fixing Sub Thermistor

⚠Caution 1

Take care not to touch the surface [1] of the fixing sub thermistor.

⚠Caution 2

Take care not to deform the fixing sub thermistor.

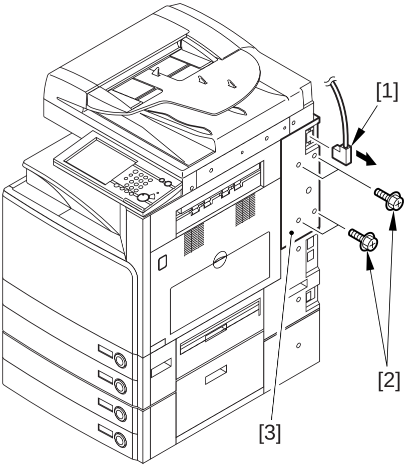


F-9-146

9.5.7 Fixing Thermal Switch

9.5.7.1 Removing the Right Cover (upper rear)

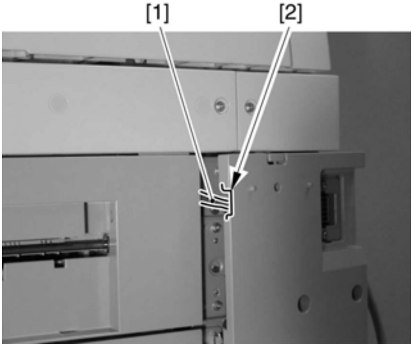
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-147

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

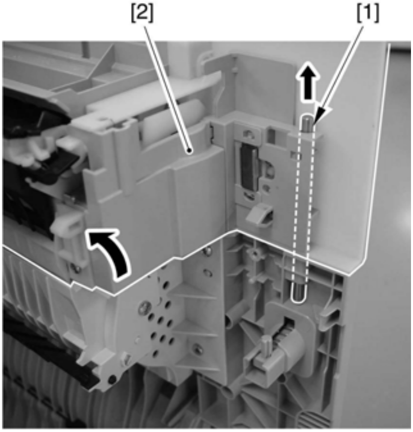


F-9-148

9.5.7.2 Removing the Right Door

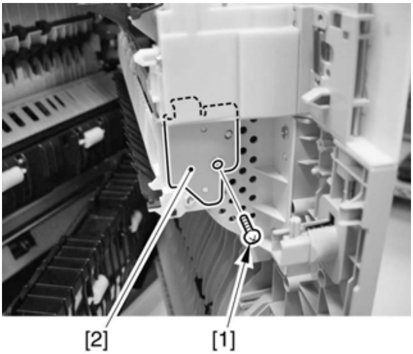
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-149

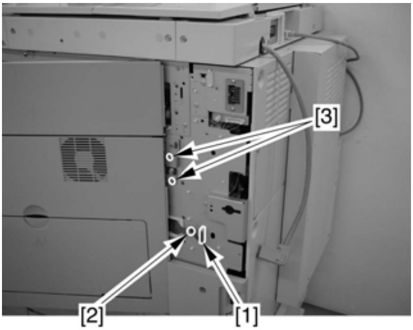
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-150

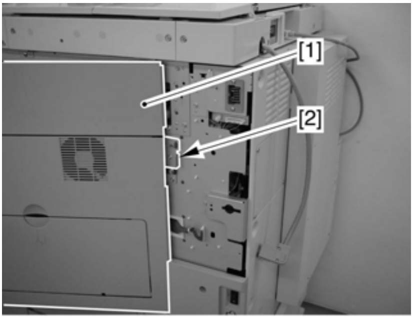
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-151

6) Detach the right door [1] together with the hinge [2].

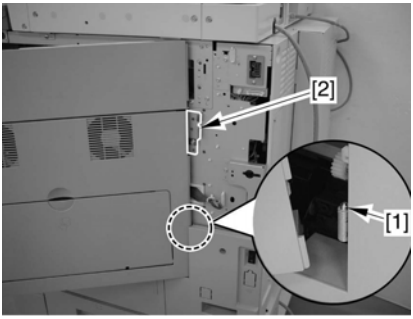


F-9-152

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

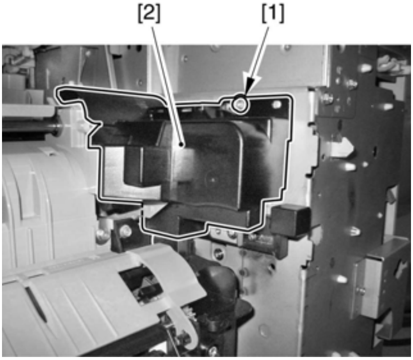


F-9-153

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

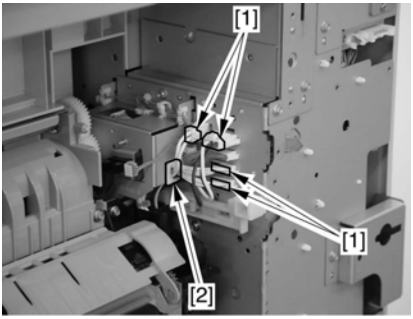
9.5.7.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



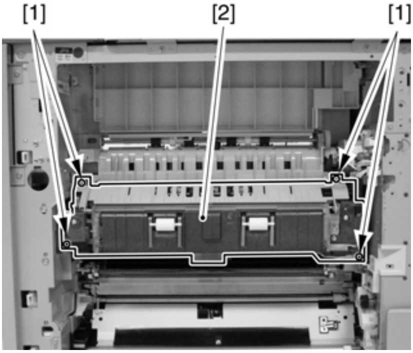
F-9-154

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-155

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-156

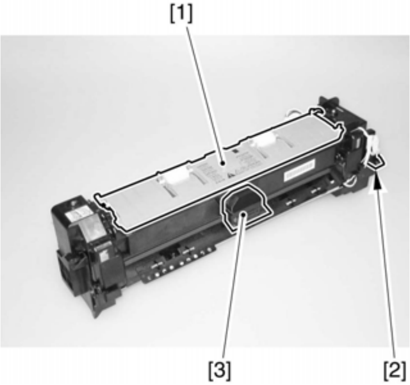
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠Placing the Fixing Assembly

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-9-157

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

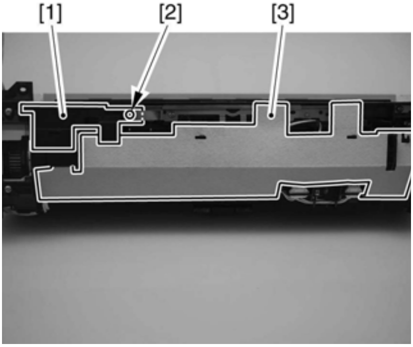
COPIER> COUNTER> MISC> FX-UP-RL

9.5.7.4 Removing the Fixing Thermal Switch

1) Remove the screw [2], and detach the insulating sheet retainer [2]; then, detach the heat insulating sheet [3].

Memo:

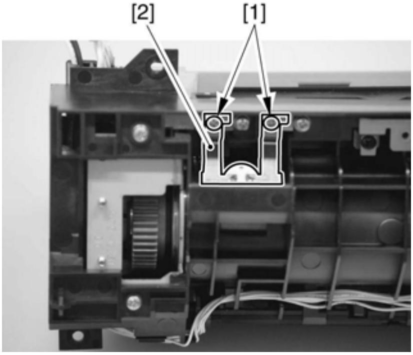
The following figure shows the back of the fixing assembly:



F-9-158

2) Remove the 2 screws [1], and detach the fixing thermal switch [2].

⚠Keep in mind that the 2 screws used to fit the fixing thermal switch in place is equipped with a washer.



F-9-159

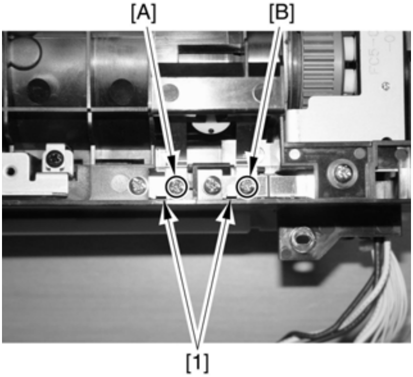
9.5.7.5 Point to Note When Mounting the Fixing Thermal Switch

⚠**Caution 1**

Check to be sure that the claw [1] of the thermal switch is in the cut-off of the conducting plate [2].

⚠**Caution 2**

Be sure to tighten the fixing screw A and then the fixing screw B of the thermal switch.

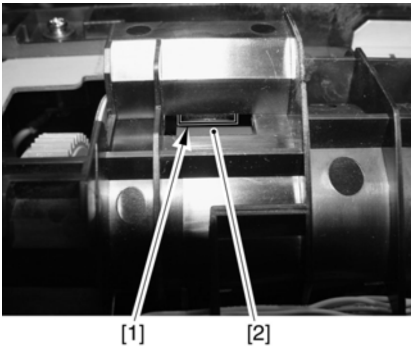


F-9-160

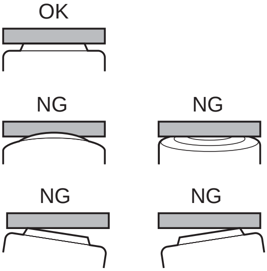
Caution 3

After tightening the fixing screws of the thermal switch, perform the following:

Check to be sure that the surface of the thermal switch [1] is level in relation to the fixing roller. (Be sure to use a pen light or the like to shine the thermal switch for this check; if not level, be sure to repeat the mounting work.)



F-9-161

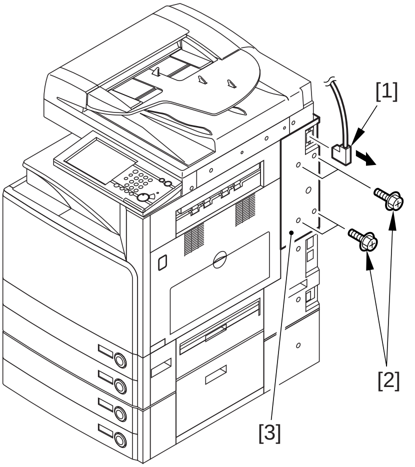


F-9-162

9.5.8 Fixing Main Heater/ Fixing Sub Heater

9.5.8.1 Removing the Right Cover (upper rear)

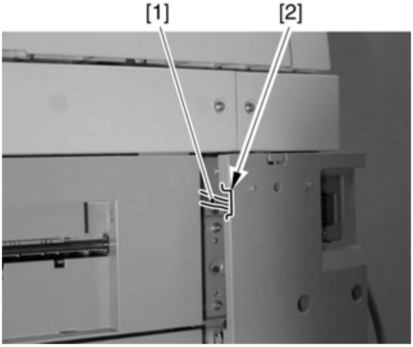
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-163

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

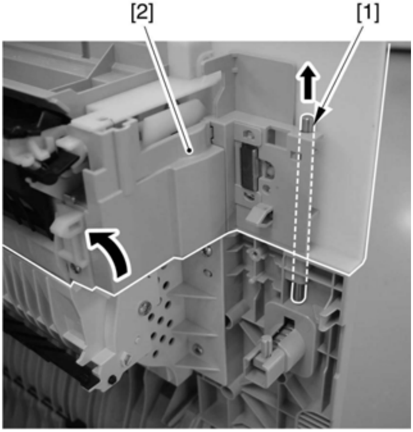


F-9-164

9.5.8.2 Removing the Right Door

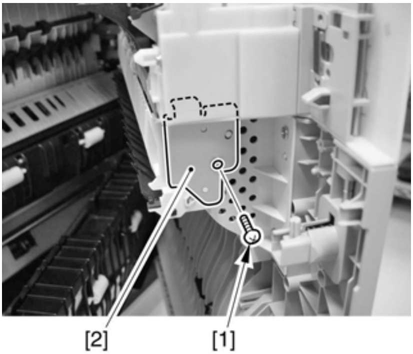
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-165

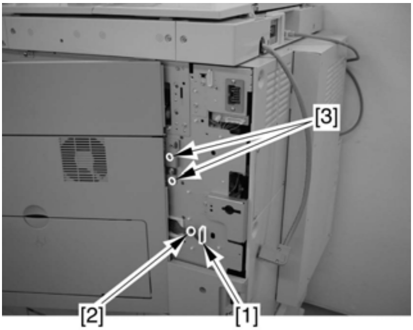
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-166

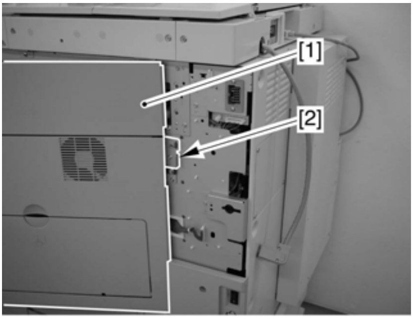
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-167

6) Detach the right door [1] together with the hinge [2].

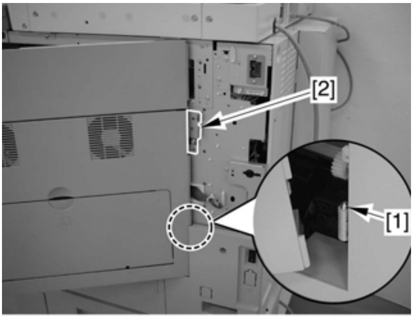


F-9-168

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

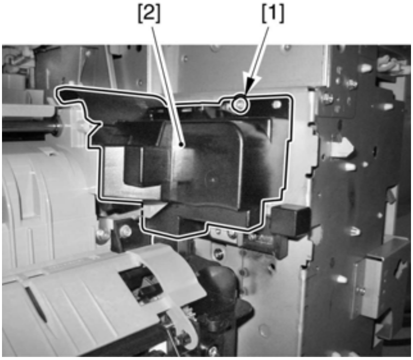


F-9-169

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

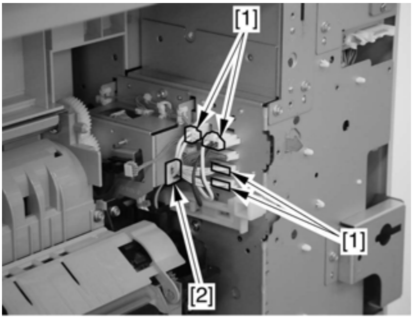
9.5.8.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



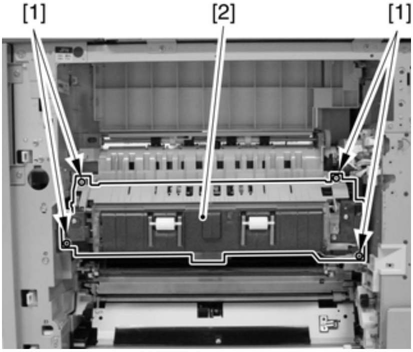
F-9-170

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-171

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-172

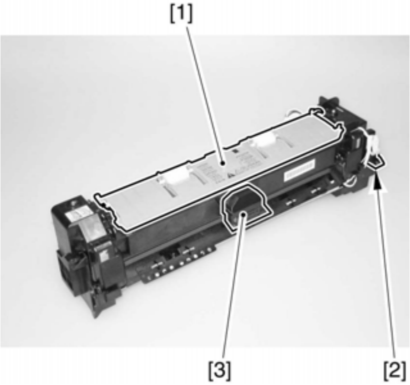
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-9-173

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

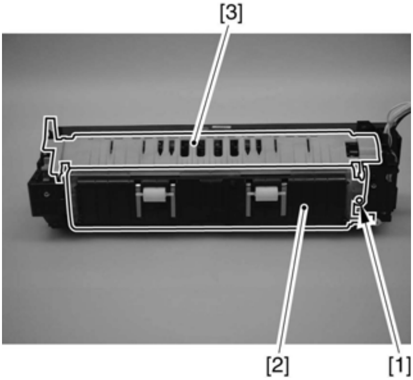
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

9.5.8.4 Removing the Fixing Inlet Guide

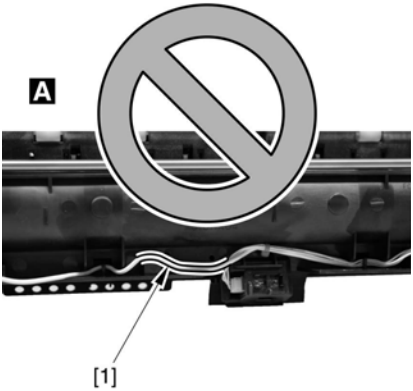
1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



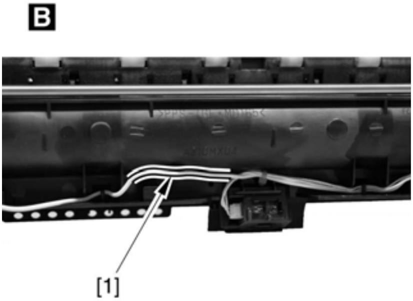
F-9-174

⚠**Routing the Harness (before re-mounting the duplex/feed guide)**

Be sure that the cable to the fixing heat retaining heater (H3) is NOT in the path indicated in Figure A. It must be routed in the path indicated in Figure B; otherwise, it can become trapped by the duplex/feed guide.



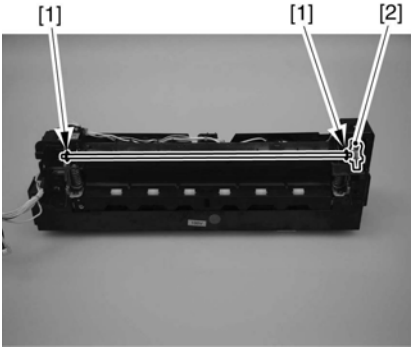
F-9-175



F-9-176

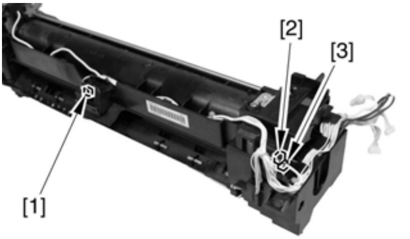
---

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



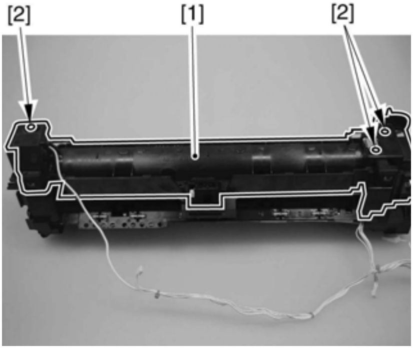
F-9-177

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



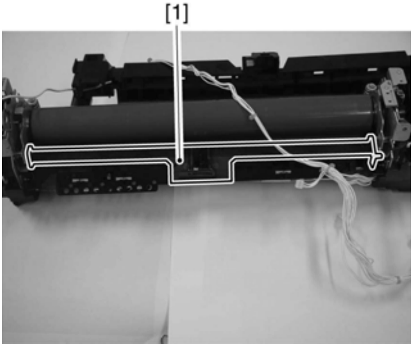
F-9-178

4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-179

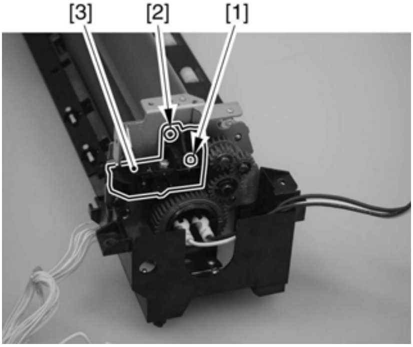
5) Remove the fixing inlet guide [1].



F-9-180

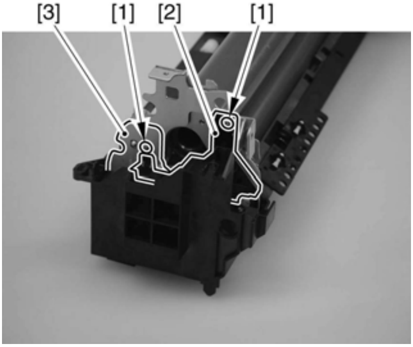
9.5.8.5 Removing the Fixing Main Heater and the Fixing Sub Heater

1) Remove the screw [1], and detach the terminal; then, remove the screw [2], and detach the heater base (front) [3].



F-9-181

2) Remove the 2 screws [1], and detach the cover [2] and the bearing retainer (front) [3].

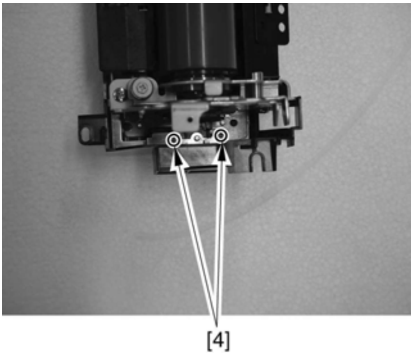


F-9-182

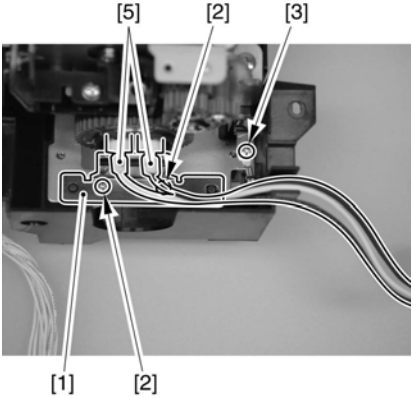
3) Remove the 2 screws [2], and detach the heater retainer [1]; then, detect the round terminal [3], remove the 2 heater retaining screws [4], and detach the main/sub heater [5].

⚠The following screws are equipped with a washer:

- 2 screws [1] used to fix the heater retainer in place
- screw [3] used to fix the ground terminal in place
- screw [4] used to retain the heater in place



F-9-183



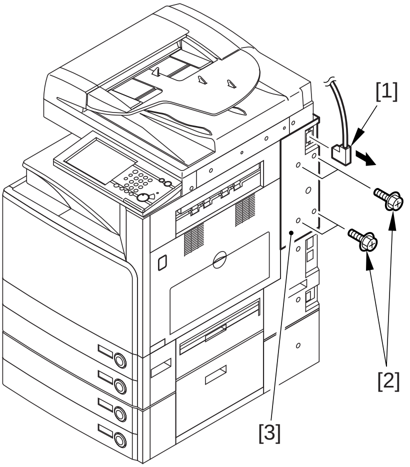
F-9-184

Memo:
The fixing main heater may be identified by its white cable, and it is located on the pickup side.
The fixing sub heater may be identified by its black cable, and it is located on the delivery side (delivery unit).

9.5.9 Fixing Heat Retaining Heater

9.5.9.1 Removing the Right Cover (upper rear)

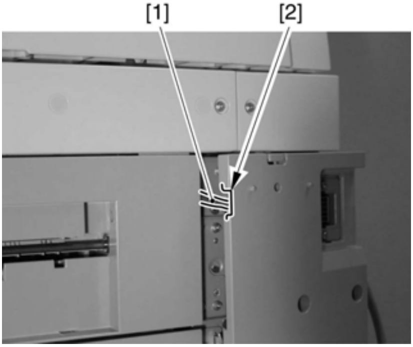
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-185

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

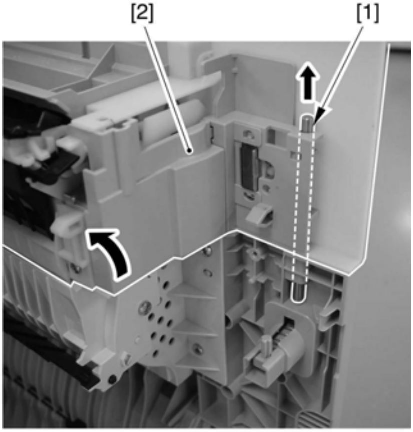
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-9-186

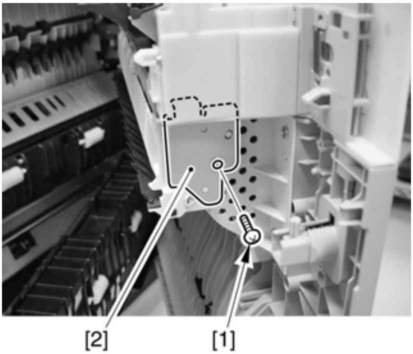
9.5.9.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-187

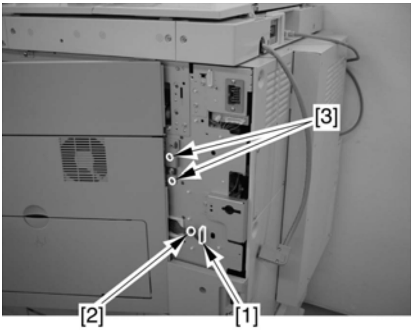
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-188

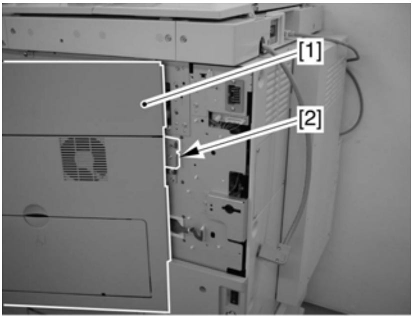
4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-9-189

6) Detach the right door [1] together with the hinge [2].

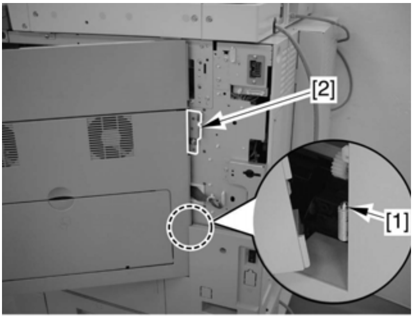


F-9-190

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

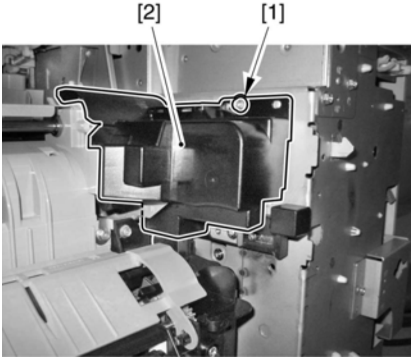


F-9-191

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

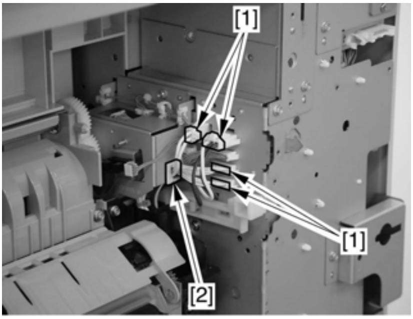
9.5.9.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



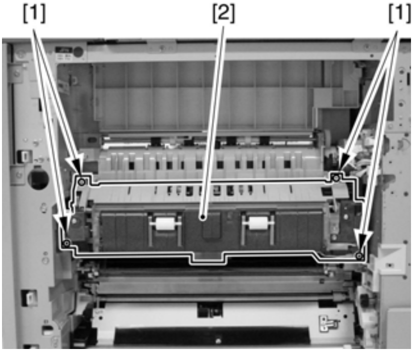
F-9-192

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-193

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-194

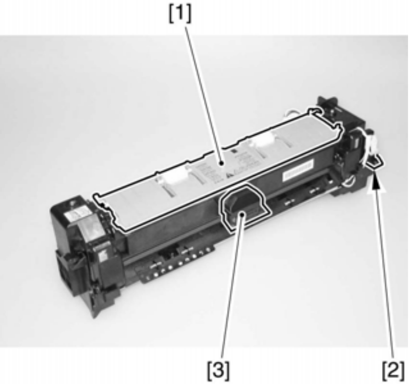
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-9-195

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

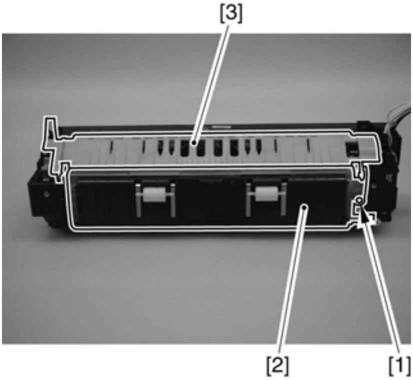
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

9.5.9.4 Removing the Fixing Heat Retention Heater

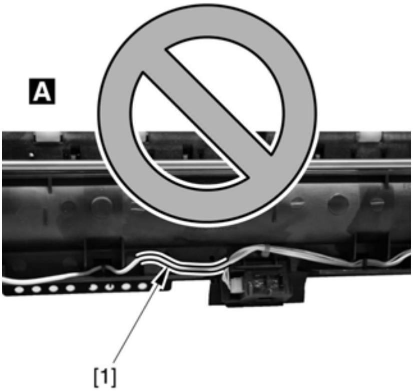
1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



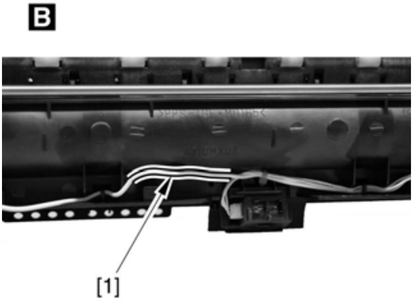
F-9-196

⚠Routing the Harness (before re-mounting the duplex/feed guide)

Be sure that the cable to the fixing heat retaining heater (H3) is NOT in the path indicated in Figure A. It must be routed in the path indicated in Figure B; otherwise, it can become trapped by the duplex/feed guide.



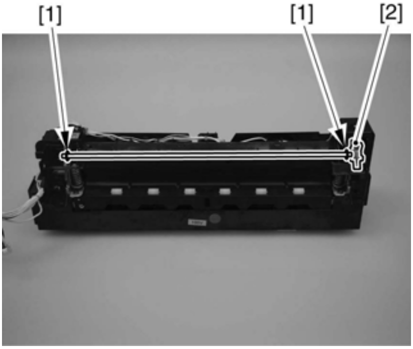
F-9-197



F-9-198

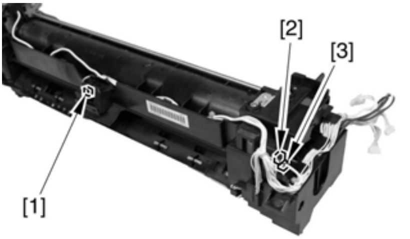
---

2) Remove the 2 E-rings [1], and detach the jam removal dial.



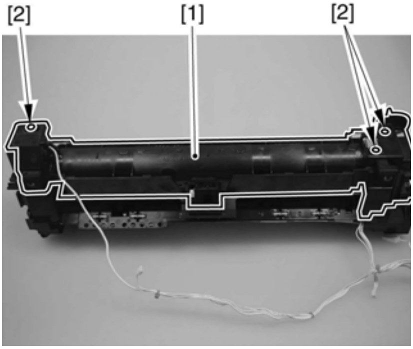
F-9-199

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



F-9-200

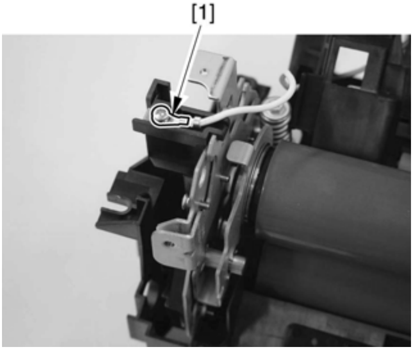
4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-201

5) Remove the round terminal connected to the heat retention heater.

⚠Keep in mind that the fixing screw used for the round terminal is equipped with a washer.

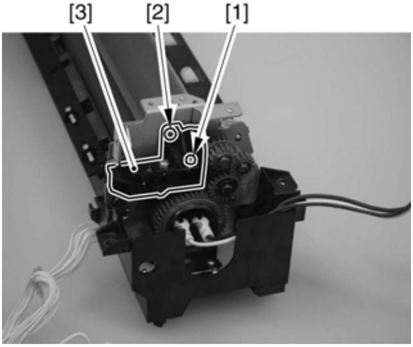


F-9-202

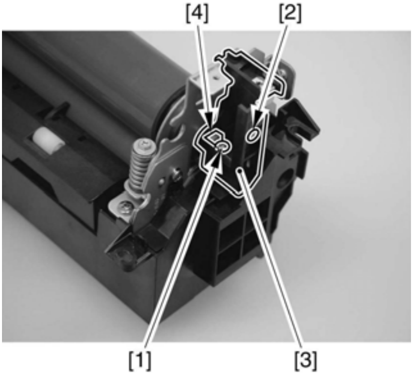
6) Remove the 2 screws [1], and detach the terminal; then, remove the 2 screws [2], and detach the heater base [3] and the heat retention heater [4].

⚠Keep in mind that the screw used for

the heat retention heater is equipped with a washer.



F-9-203

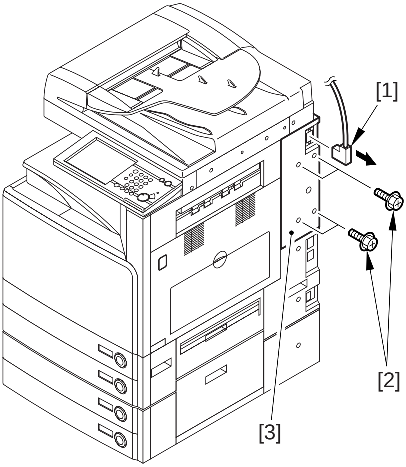


F-9-204

9.5.10 Fixing Inlet Guide

9.5.10.1 Removing the Right Cover (upper rear)

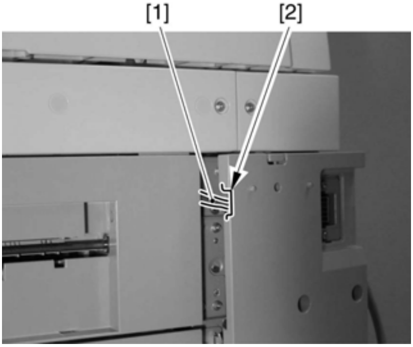
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-205

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



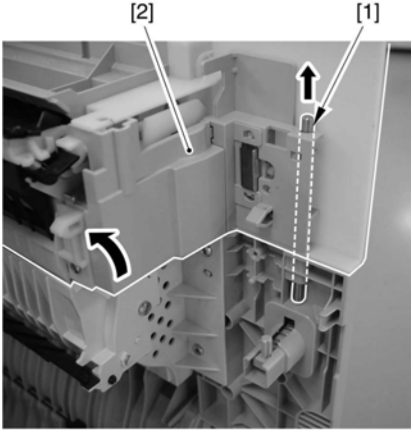
F-9-206

9.5.10.2 Removing the Right Door

iR C3100

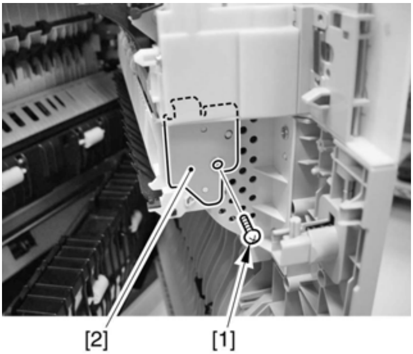
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-207

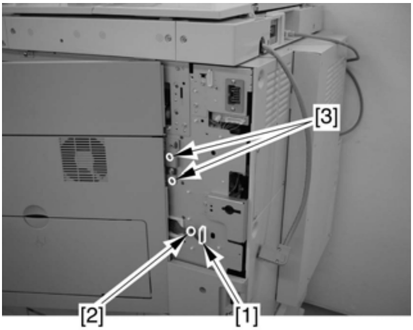
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-208

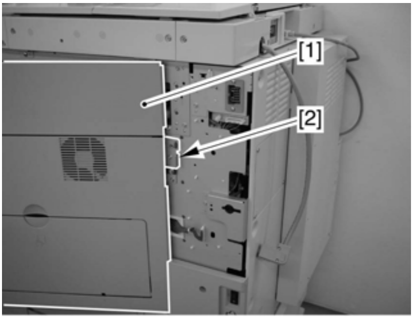
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-209

6) Detach the right door [1] together with the hinge [2].

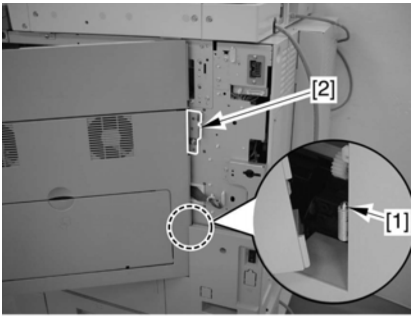


F-9-210

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

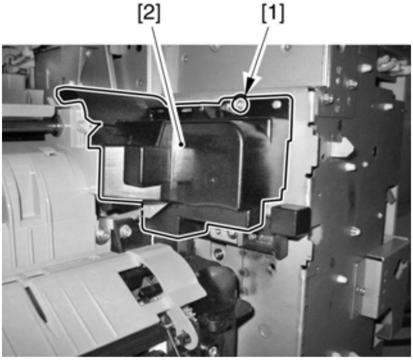


F-9-211

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

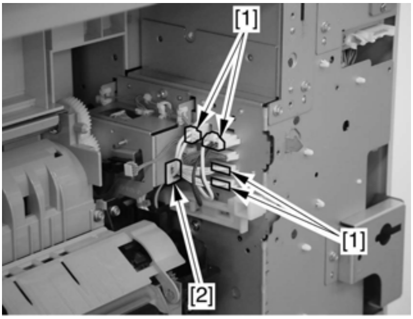
9.5.10.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



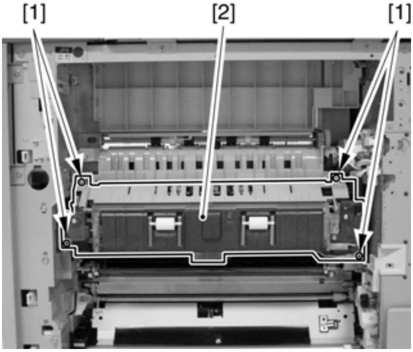
F-9-212

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-213

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-214

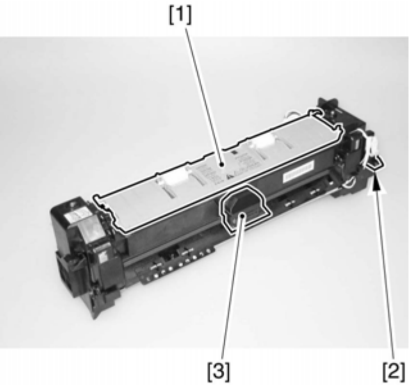
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠Placing the Fixing Assembly

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



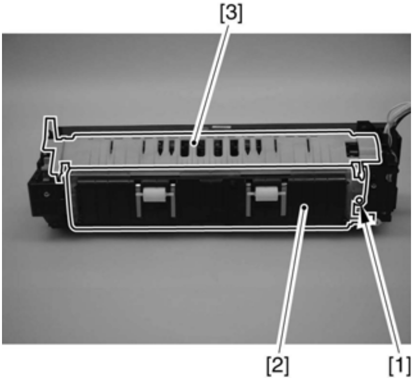
F-9-215

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

9.5.10.4 Removing the Fixing Inlet Guide

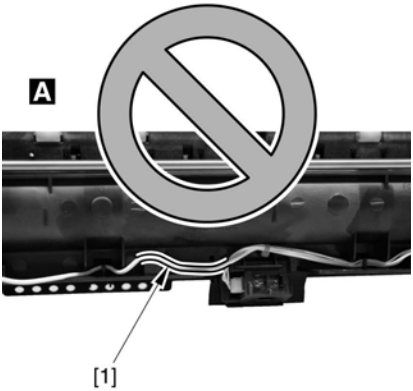
1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



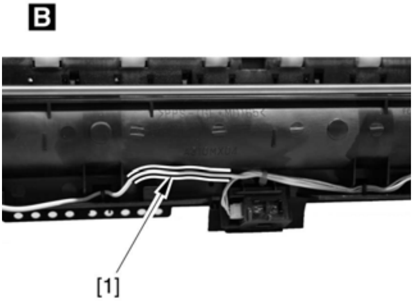
F-9-216

Routing the Harness (before remounting the duplex/feed guide)

Be sure that the cable to the fixing heat retaining heater (H3) is NOT in the path indicated in Figure A. It must be routed in the path indicated in Figure B; otherwise, it can become trapped by the duplex/feed guide.



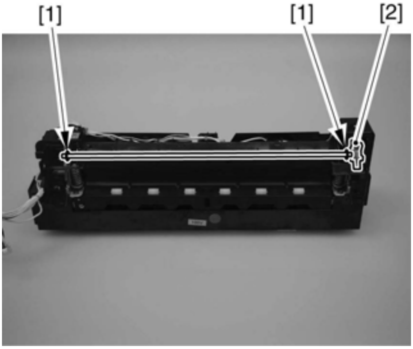
F-9-217



F-9-218

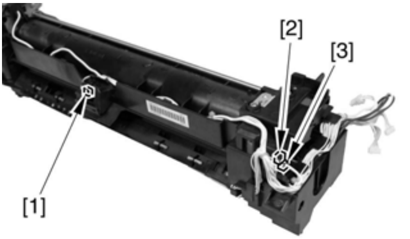
---

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



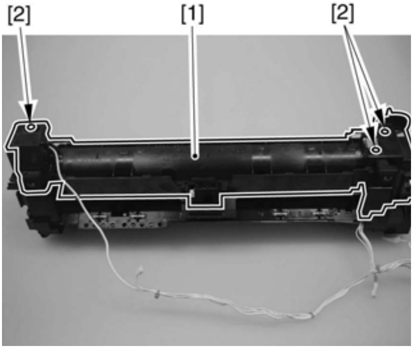
F-9-219

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



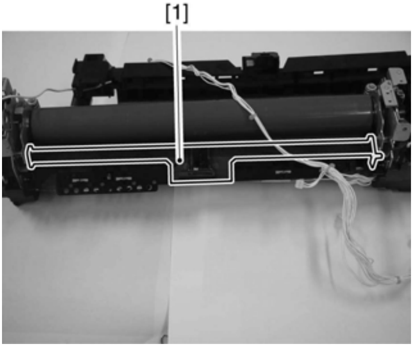
F-9-220

4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-221

5) Remove the fixing inlet guide [1].

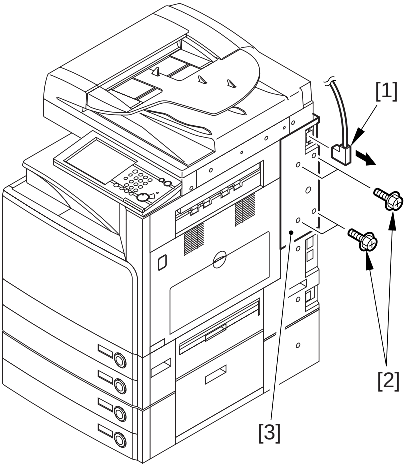


F-9-222

9.5.11 Fixing Delivery Guide

9.5.11.1 Removing the Right Cover (upper rear)

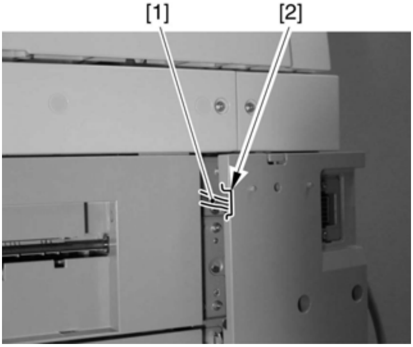
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-223

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

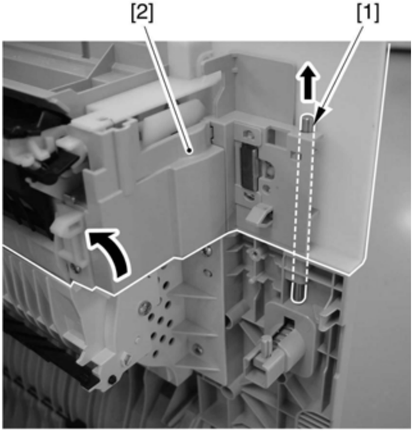


F-9-224

9.5.11.2 Removing the Right Door

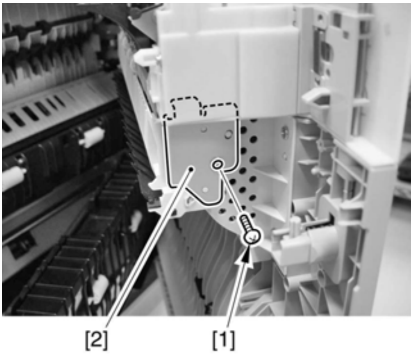
iR C3100

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-225

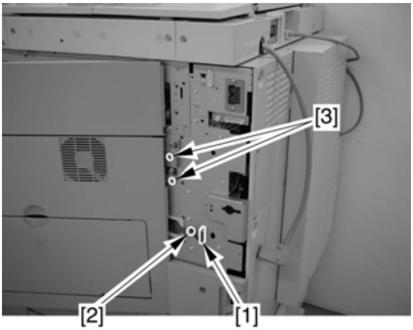
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-226

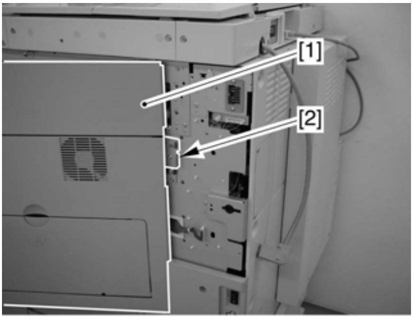
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-227

6) Detach the right door [1] together with the hinge [2].

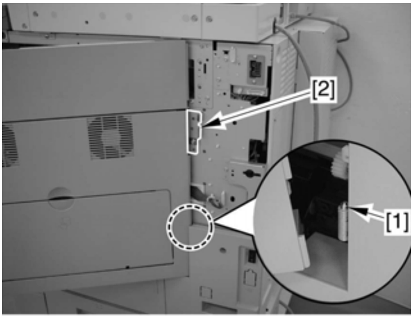


F-9-228

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

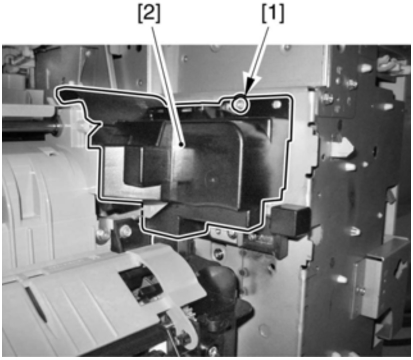


F-9-229

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

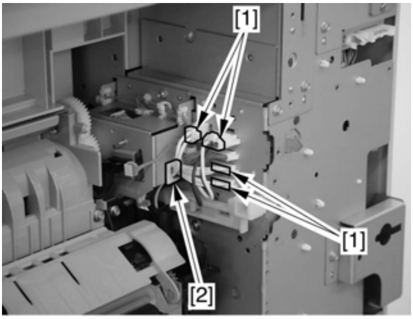
9.5.11.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



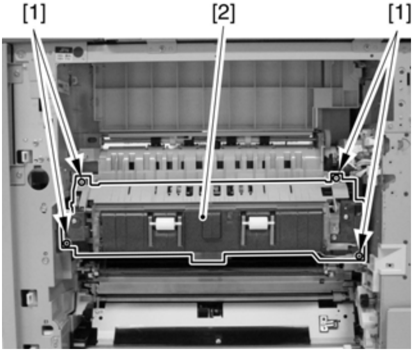
F-9-230

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-231

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-232

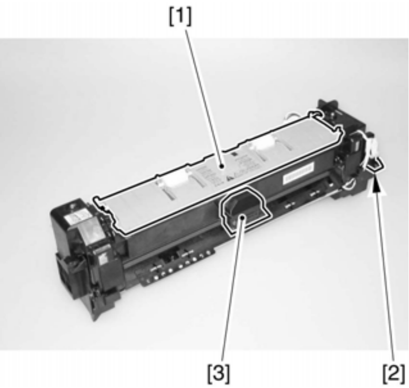
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



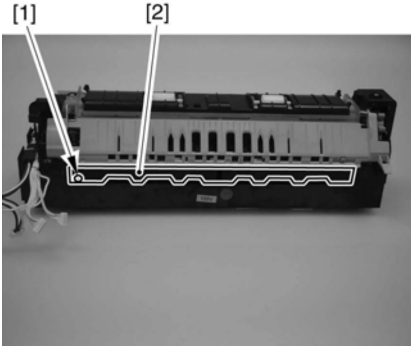
F-9-233

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

9.5.11.4 Removing the Fixing Delivery Guide

1) Remove the screw [1], and detach the fixing delivery guide [2].

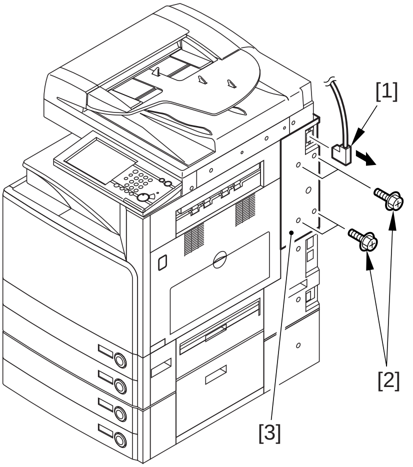


F-9-234

9.5.12 Fixing Inlet Sensor

9.5.12.1 Removing the Right Cover (upper rear)

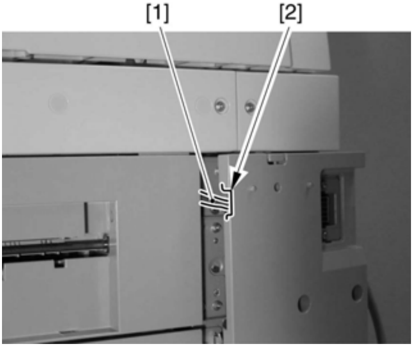
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-235

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

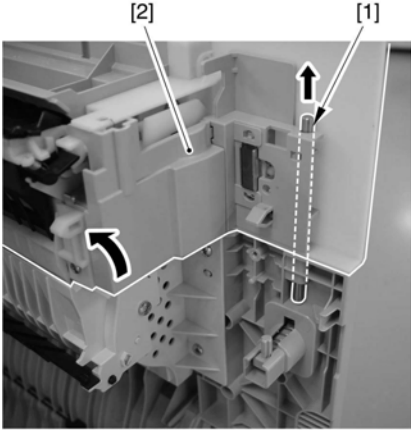


F-9-236

9.5.12.2 Removing the Right Door

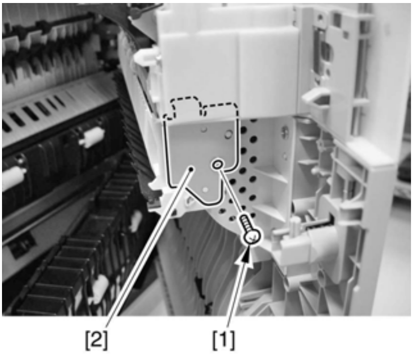
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-237

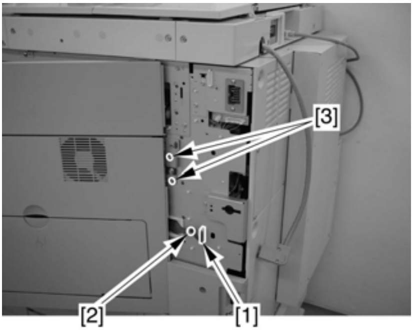
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-238

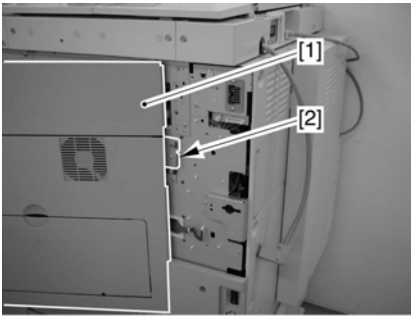
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-239

6) Detach the right door [1] together with the hinge [2].

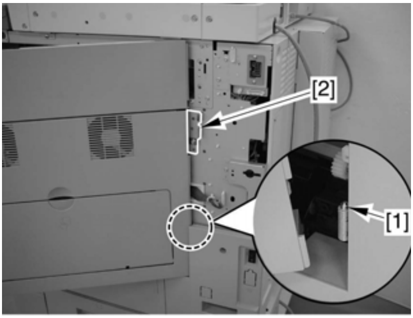


F-9-240

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

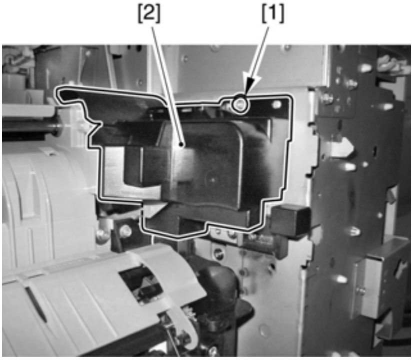


F-9-241

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

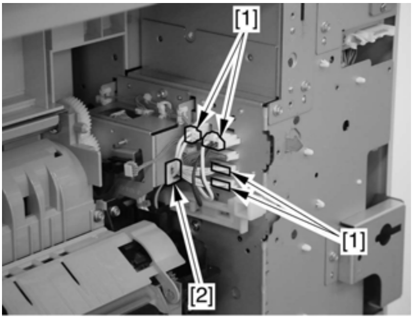
9.5.12.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



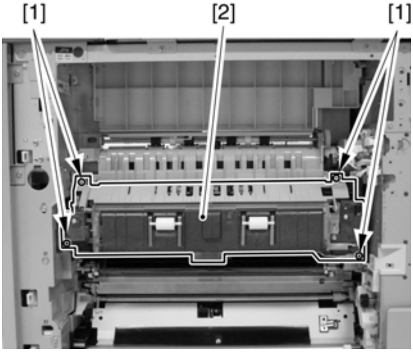
F-9-242

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-243

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-244

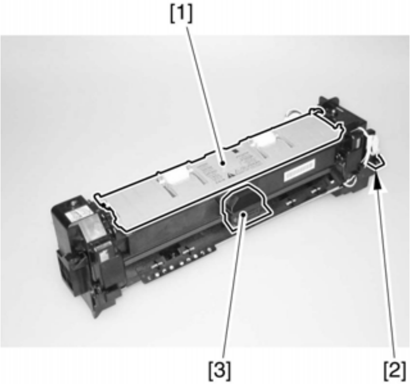
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠Placing the Fixing Assembly

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.

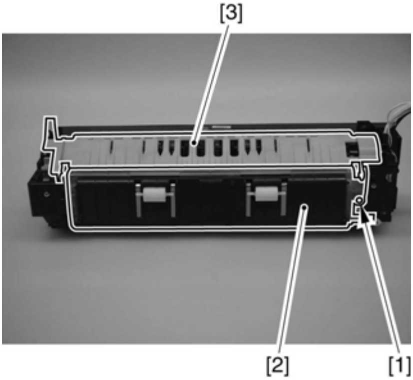


F-9-245

1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
   COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
   COPIER> COUNTER> MISC> FX-UP-RL

9.5.12.4 Removing the Fixing Inlet Sensor

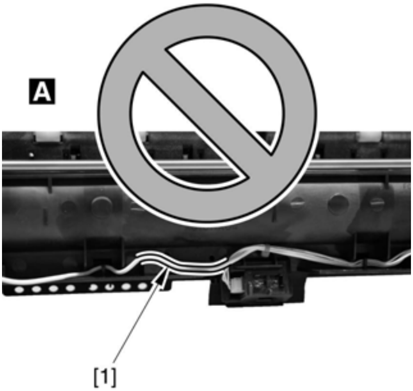
1) Remove the screw [1], and detach the duplex feeding unit [2] and the jam access guide [3] at the same time.



F-9-246

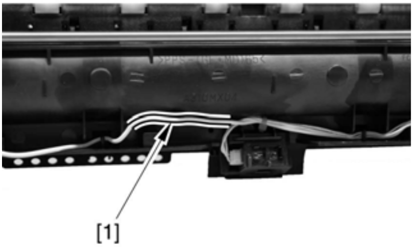
Routing the Harness (before re-mounting the duplex/feed guide)

Be sure that the cable to the fixing heat retaining heater (H3) is NOT in the path indicated in Figure A. It must be routed in the path indicated in Figure B; otherwise, it can become trapped by the duplex/feed guide.



F-9-247

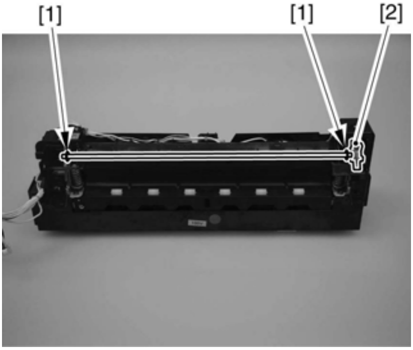
B



F-9-248

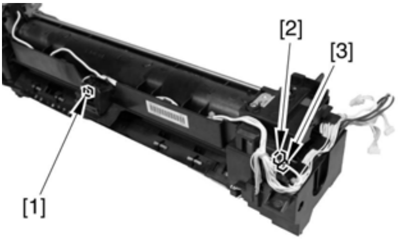
---

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



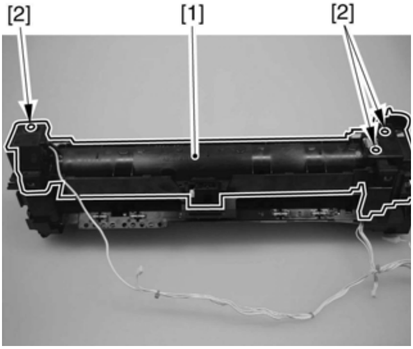
F-9-249

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



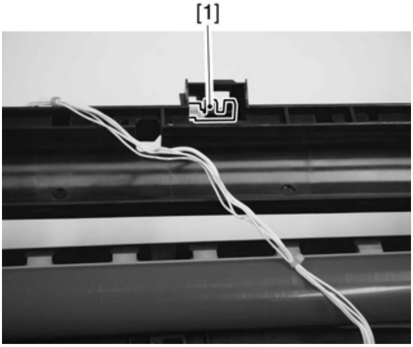
F-9-250

4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-251

5) Detach the fixing inlet sensor [1] from the fixing inside cover.

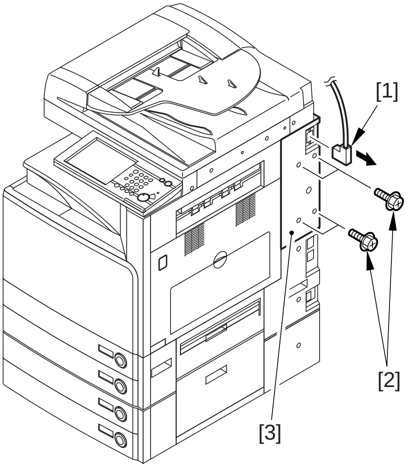


F-9-252

9.5.13 Fixing Delivery Sensor

9.5.13.1 Removing the Right Cover (upper rear)

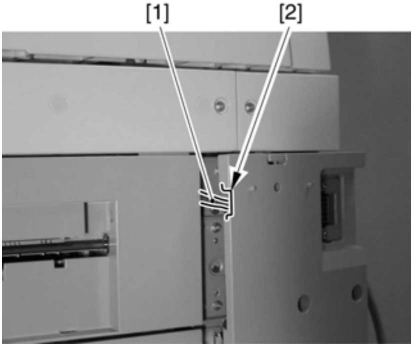
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-253

Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

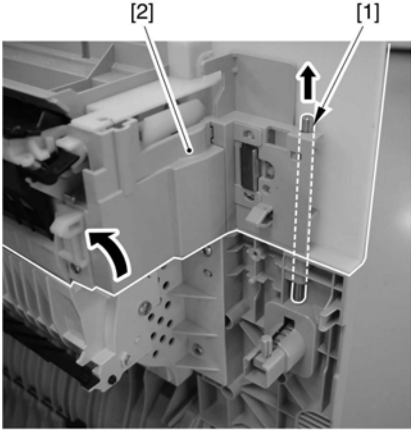


F-9-254

9.5.13.2 Removing the Right Door

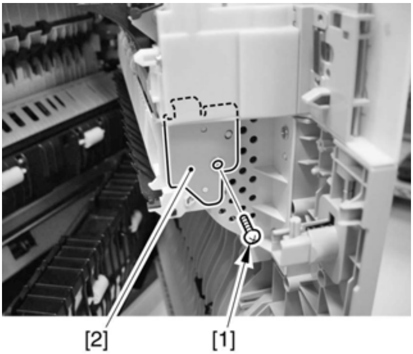
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-255

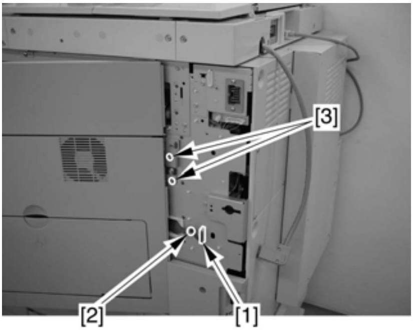
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-256

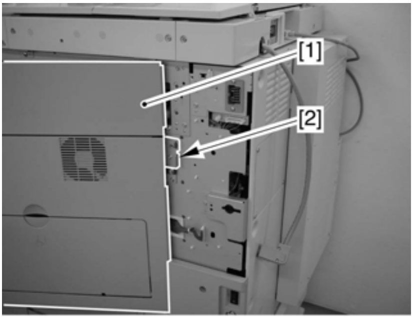
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-257

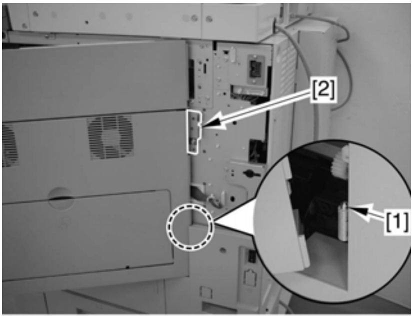
6) Detach the right door [1] together with the hinge [2].



F-9-258

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

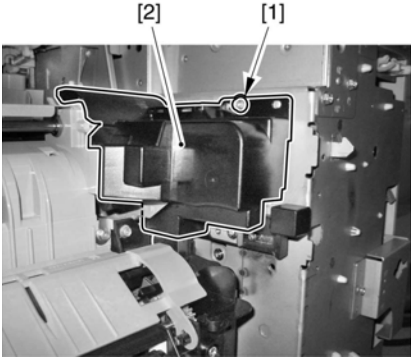


F-9-259

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

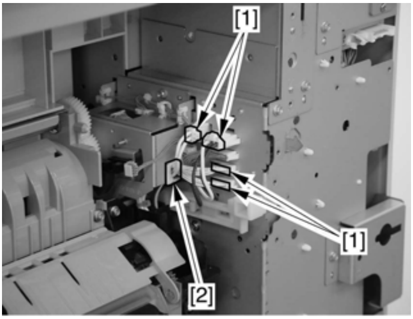
9.5.13.3 Removing the Fixing Unit

1) Remove the screw [1], and detach the connector cover [2].



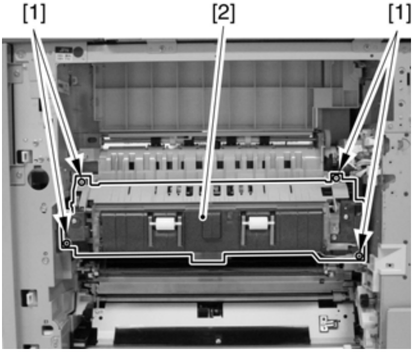
F-9-260

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-261

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-262

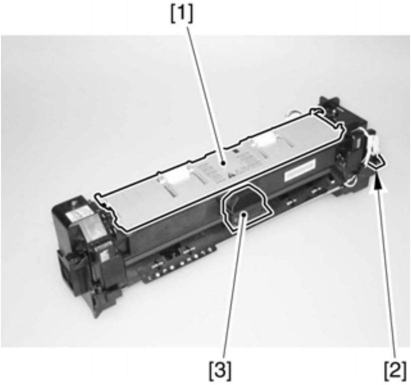
Memo:

Of the 4 screws, the 2 on the left are stepped screws.

⚠**Placing the Fixing Assembly**

If you need to place the fixing assembly on a table or the floor, be sure its area of duplexing rolls [1] faces upward.

Particularly, avoid placing it with its screw area [2] or the inlet sensor area [3] facing down; otherwise, these areas will likely suffer damage.



F-9-263

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

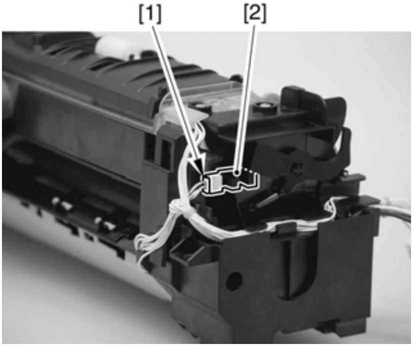
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

9.5.13.4 Removing the Fixing Delivery Sensor

1) Disconnect the connector [1], and detach the fixing delivery sensor [2].



F-9-264

Chapter 10 Externals and Controls

Contents

10.1 Control Panel..10-1
  10.1.1 Overview 10-1
  10.1.2 LCD Processing 10-2
  10.1.3 Adjusting the LCD Screen Contrast...10-2
  10.1.4 Control Panel CPU 10-2
10.2 Counters 10-3
  10.2.1 Overview 10-3
  10.2.2 Timing of Increasing the Count 10-4
10.3 Fans 10-6
  10.3.1 Overview 10-6
  10.3.2 2-Speed Control 10-7
  10.3.3 Sequence of Operations..10-8
10.4 Power Supply 10-9
  10.4.1 Power Supply 10-9
    10.4.1.1 Route of Power Supply Inside the Printer...............................10-9
    10.4.1.2 Route of Power to the Reader Unit 10-11
    10.4.1.3 Timing of Supplying Power to the Reader Unit....................10-11
    10.4.1.4 Routes of Power to various Options.......................................10-12
  10.4.2 Rated Output of DC Power Supply PCB 10-14
    10.4.2.1 Rated Output of the Printer Unit Power Supply PCB 10-14
    10.4.2.2 Rated Output of the Controller Power Supply PCB...............10-14
    10.4.2.3 Rated Output of the Options Power Supply PCB 10-15
  10.4.3 Protection Function 10-15
    10.4.3.1 Protective Functions...10-15
  10.4.4 Backup Battery...10-16
    10.4.4.1 Backup Battery..10-16
  10.4.5 Energy-Saving Function...10-17
    10.4.5.1 Overview 10-17
    10.4.5.2 Power Supply and Heater Control...10-18
10.5 Parts Replacement Procedure...10-21
  10.5.1 Option Power Supply Assembly 10-21
    10.5.1.1 Removing the Rear Cover 10-21

10.5.1.2 Removing the Accessories Power Supply 10-21
10.5.2 Controller Power Supply Unit 10-22
10.5.2.1 Removing the Rear Cover (right) 10-22
10.5.2.2 Removing the Controller Power Supply 10-23
10.5.3 Printer Power Supply Unit 10-23
10.5.3.1 Removing the Rear Cover (right) 10-23
10.5.3.2 Removing the Controller Box 10-24
10.5.3.3 Removing the Accessories Power Supply 10-26
10.5.3.4 Removing the Controller Power Supply 10-27
10.5.3.5 Removing the Left Cover (lower) 10-28
10.5.3.6 Removing the Printer Unit Power Supply 10-28
10.5.4 Control Panel 10-29
10.5.4.1 Removing the Support Cover (right) 10-29
10.5.4.2 Removing the Control Panel 10-29
10.5.5 Control Panel LCD Unit 10-30
10.5.5.1 Removing the Support Cover (right) 10-30
10.5.5.2 Removing the Control Panel 10-31
10.5.5.3 Removing the Control Panel Lower Cover 10-32
10.5.5.4 Removing the Control Panel LCD 10-32
10.5.6 DC Controller PCB 10-33
10.5.6.1 Removing the Rear Cover 10-33
10.5.6.2 Removing the DC Controller PCB 10-34
10.5.6.3 When Replacing the DC Controller 10-34
10.5.7 Leakage Breaker 10-35
10.5.7.1 Removing the Rear Cover 10-35
10.5.7.2 Removing the Leakage Breaker 10-36
10.5.8 HVT PCB 10-37
10.5.8.1 Removing the Rear Cover (right) 10-37
10.5.8.2 Removing the Controller Box 10-37
10.5.8.3 Removing the Accessories Power Supply 10-39
10.5.8.4 Removing the High-Voltage Sub PCB 10-40
10.5.8.5 Removing the Controller Power Supply 10-40
10.5.8.6 Removing the Printer Power Supply 10-41
10.5.8.7 Removing the HVT PCB 10-42
10.5.8.8 When Replacing the HVT PCB 10-43
10.5.9 High-Voltage Sub PCB 10-43

10.5.9.1 Removing the Rear Cover 10-43
10.5.9.2 Removing the Accessories Power Supply 10-44
10.5.9.3 Removing the High-Voltage Sub PCB 10-45
10.5.10 Control Panel CPU PCB 10-45
10.5.10.1 Removing the Support Cover (right) 10-45
10.5.10.2 Removing the Control Panel 10-46
10.5.10.3 Removing the Control Panel Lower Cover 10-47
10.5.10.4 Removing the Control Panel CPU PCB 10-47
10.5.11 Control Panel Key Switch PCB 10-48
10.5.11.1 Removing the Support Cover (right) 10-48
10.5.11.2 Removing the Control Panel 10-48
10.5.11.3 Removing the Control Panel Lower Cover 10-49
10.5.11.4 Removing the Control Panel Key Switch PCB 10-49
10.5.12 Control Panel Inverter PCB 10-50
10.5.12.1 Removing the Support Cover (right) 10-50
10.5.12.2 Removing the Control Panel 10-51
10.5.12.3 Removing the Control Panel Lower Cover 10-52
10.5.12.4 Removing the Control Panel Inverter 10-52
10.5.13 Main Power Switch 10-52
10.5.13.1 Removing the Rear Cover 10-52
10.5.13.2 Removing the Right Cover (lower rear) 10-53
10.5.13.3 Removing the Main Power Switch 10-53
10.5.14 Front Cover Open/Closed Detecting Switch 10-54
10.5.14.1 Removing the Toner Bottle Retainer 10-54
10.5.14.2 Removing the Inside Front Cover (right) 10-55
10.5.14.3 Removing the Front Cover Open/Closed SW 10-55
10.5.15 ITB Fan 10-56
10.5.15.1 Removing the Delivery Tray 10-56
10.5.15.2 Removing the Inside Front Cover (right) 10-57
10.5.15.3 Removing the ITB Fan 10-57
10.5.16 Toner Intake Fan 10-58
10.5.16.1 Removing the Rear Cover 10-58
10.5.16.2 Removing the Left Cover (rear) 10-58
10.5.16.3 Removing the Toner Suction Fan 10-59
10.5.17 Machine Heat Discharge Fan 10-60
10.5.17.1 Removing the Right Cover (upper rear) 10-60

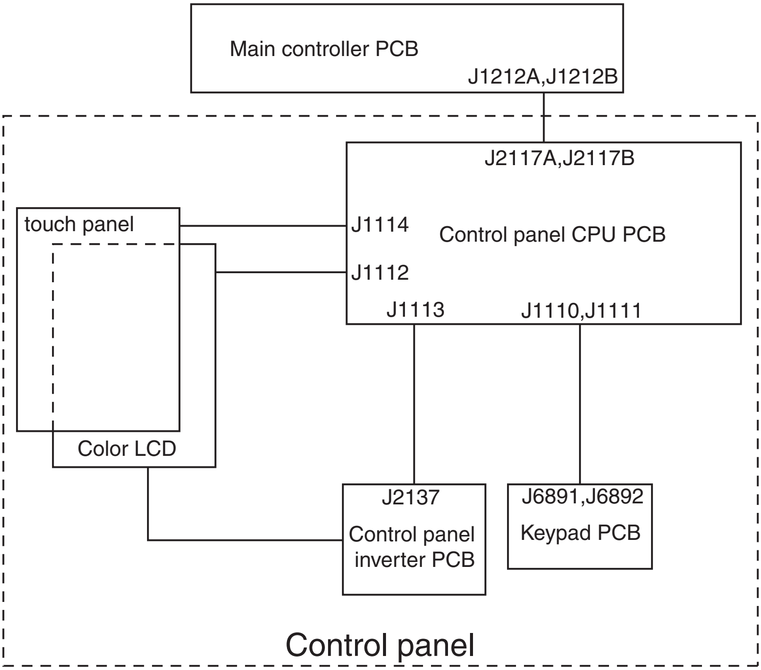
  10.5.17.2 Removing the Right Door 10-61
  10.5.17.3 Removing the Machine Heat Exhaust Fan........................... 10-62
  10.5.17.4 Routing the Heat Discharge Fan Harness 10-63
10.5.18 Toner Intake Fan Filter 10-64
  10.5.18.1 Removing the Toner Suction Fan Cover 10-64
  10.5.18.2 Removing the Toner Suction Fan Filter............................... 10-64
10.5.19 Motor of Main Drive Assembly... 10-64
  10.5.19.1 Removing the Rear Cover... 10-64
  10.5.19.2 Removing the DC Controller PCB 10-65
  10.5.19.3 Removing the Controller Box... 10-65
  10.5.19.4 Removing the Main Drive Motor 10-68
10.5.20 Right Door 10-69
  10.5.20.1 Removing the Right Cover (upper rear) 10-69
  10.5.20.2 Removing the Right Door... 10-69
10.5.21 Cautions in Handling the Left Stay.. 10-71
  10.5.21.1 Points to Note about Handling the Left Stay 10-71

10.1 Control Panel

10.1.1 Overview

The machine's control panel consists of the following PCBs, LCD, and touch panel, each offering the functions that follow:

- LCD display function
- contrast adjustment
- touch switch input
- hardware key input


Main controller PCB
J1212A,J1212B
J2117A,J2117B
touch panel
J1114
Control panel CPU PCB
J1112
J1113
J1110,J1111
Color LCD
J2137
Control panel inverter PCB
J6891,J6892
Keypad PCB
Control panel

F-10-1

10.1.2 LCD Processing

The CPU on the main controlled PCB sends data (display data) to the control panel CPU PCB as instructed by the program.
The data is sent through the control panel PCB to reach the color LCD.

10.1.3 Adjusting the LCD Screen Contrast

The machine is equipped with a density adjustment volume (VR6801) on its keypad PCB for use by the user to adjust the contrast of the LCD screen.

10.1.4 Control Panel CPU

- Monitoring the Key Inputs
  It communicates the keypad and function key inputs to the CPU on the main controller PCB.
- Monitoring the Touch Panel Input
  It communicates the key inputs made on the touch panel to the CPU on the main controller PCB.
- Controlling the Buzzer Sound
- Controlling the Control Panel LED

Memo:
the color LCD is driven by the main controller, and the control panel CPU PCB serves to relay the drive signals.

10.2 Counters

10.2.1 Overview

The machine is equipped with counters that indicate the counts of output according to types of printers. These counters are indicated in response to a press on the Check key on the control panel, and they operate as follows (as set at time of shipment from the factory):

T-10-1

Model	Counter 1	Counter 2	Counter 3	Counter 4	Counter 5	Counter 6
100V *1 ***	total 1	total (black-and-white 1)	copy (full color + mono; 1)	print (full color + mono; 1)	not indicated**	not indicated**
	101	**108**	**232**	**324**	**000**	**000**
100V *1 ****	total 2	copy (full color + mono color; 2)	total A (full color + mono color; 2)	copy (black-and-white 2)	total A (black-and-white 2)	not indicated**
	102	**231**	**148**	**222**	**133**	**000**
120V TW *2	total 1	total (black-and-white 1)	copy + print (full color, large)	copy + print (full color, small)	total (mono color 1)	not indicated **
	101	**108**	**401**	**402**	**118**	**000**
120V UL *3	total 1	total (black-and-white 1)	copy (full color + mono color, large)	copy (full color + mono color, small)	print (full color+ mono color, large)	print (full color + mono color, small)
	101	**108**	**229**	**230**	**321**	**322**
230V *4	total 1	total (black-and-white 1)	copy + print (full color, large)	copy + print (full color, small)	total (mono color 1)	total 1 (duplex)
	101	**108**	**401**	**402**	**118**	**114**

Model	Counter 1	Counter 2	Counter 3	Counter 4	Counter 5	Counter 6
240V CA *5	total 1	total (black-and-white 1)	copy (full color + mono color, large)	copy (full color + mono color, small)	print (full color + mono color, large)	print (full color + mono color, small)
	101	**108**	**229**	**230**	**321**	**322**
230V AMS *6	total 1	total (full color + mono color, large)	total (full color + mono color, small)	total (black-and-white, large)	total (black-and-white, small)	scan (total 1)
	101	**122**	**123**	**112**	**113**	**501**

<Guide to Notations>
large: large-size paper (longer than 364 mm in feed direction; count increased by 1).
small: small-size paper (364 mm in feed length or shorter).
total: all (C+P; count increased by 1).
duplex: duplexing (in auto duplexing; count increased by 1).

- The 3-digit number in the counter column indicates the setting of the following service mode item: COPIER >OPTION >USER > COUNTER1 to 6
- counters 2 through 6 may be changed using the following service mode item: COPIER>OPTION>USER.

*1: F14-3019/3011/3029/3012/3049/3014/3059/3015
*2: F14-3001
*3: F14-3031
*4: F14-3041/3060/3070/3044 /3048/3078
*5: F14-3061/3068
*6: F14-3091/3094
**: by default, not indicated; may be changed in service mode.
***: if '0' is set for the following: COPIER>OPTION>USER>CNT-SW.
****: if '1' is set for the following: COPIER>OPTION>USER>CNT-SW.

10.2.2 Timing of Increasing the Count

The machine increases the count depending on the selected mode (single-sided, double-sided), delivery location, and the type of accessory connected to it.

1. Single-Sided Print, 2nd Side of a Double-Sided Print

   In the case of a single-sided print or the 2nd side of a double-sided print, the machine increase the count when the trailing edge of paper is discharged outside the machine, as indicated by the output of the following sensor:

T-10-2

Condition	Delivery location	sensor
w/o finisher	to tray 1	delivery sensor (PS14)
	to tray 2	No. 2 delivery sensor (PS1A)
	to tray 3	No. 3 delivery sensor (PS5A)
w/ finisher		delivery sensor of finisher

2. 1st Side of a Double-Sided Print

   The machine increases the count when the duplex feed sensor (PS17) goes on, assuming that the printing on the 1st side is over.

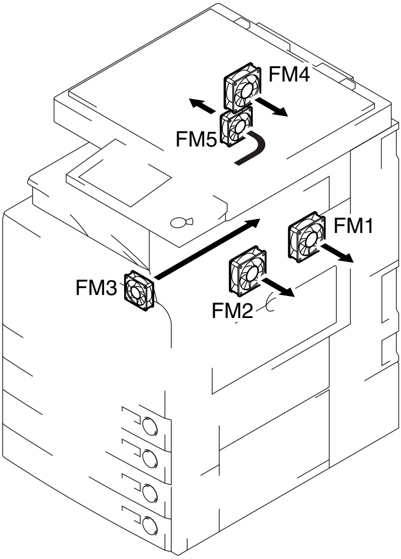
10.3 Fans

10.3.1 Overview

The machine is equipped with the following fans arranged as shown in the diagram:

T-10-3

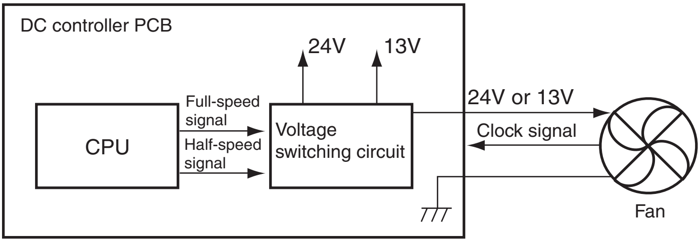
Notation	Name	Filter	2-speed control	Remarks
FM1	heat exhaust fan (rear)	absent	present	cools the fixing assembly.
FM2	heat exhaust fan (front)	absent	present	cools the fixing assembly.
FM3	ITB fan	present	present	cools the ITB (intermediate transfer belt).
FM4	controller cooling fan	absent	absent	cools the controller.
FM5	toner collecting fan	present	absent	collects toner found astray inside the machine.


FM4
FM5
FM1
FM3
FM2

F-10-2

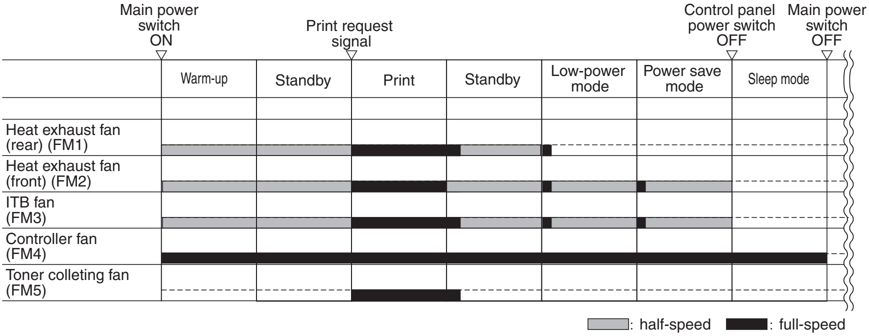
10.3.2 2-Speed Control

Some of the fans used in the machine are controlled for 2 different speeds (T07-301-01). These fans rotate at different speeds in response to the switchover of voltage by the voltage switching circuit.


DC controller PCB
24V
13V
CPU
Full-speed signal
Half-speed signal
Voltage switching circuit
24V or 13V
Clock signal
Fan

F-10-3

10.3.3 Sequence of Operations


Main power switch ON
Print request signal
Control panel power switch OFF
Main power switch OFF
Warm-up
Standby
Print
Standby
Low-power mode
Power save mode
Sleep mode
Heat exhaust fan (rear) (FM1)
Heat exhaust fan (front) (FM2)
ITB fan (FM3)
Controller fan (FM4)
Toner colleting fan (FM5)
: half-speed
: full-speed

F-10-4

10.4 Power Supply

10.4.1 Power Supply

10.4.1.1 Route of Power Supply Inside the Printer

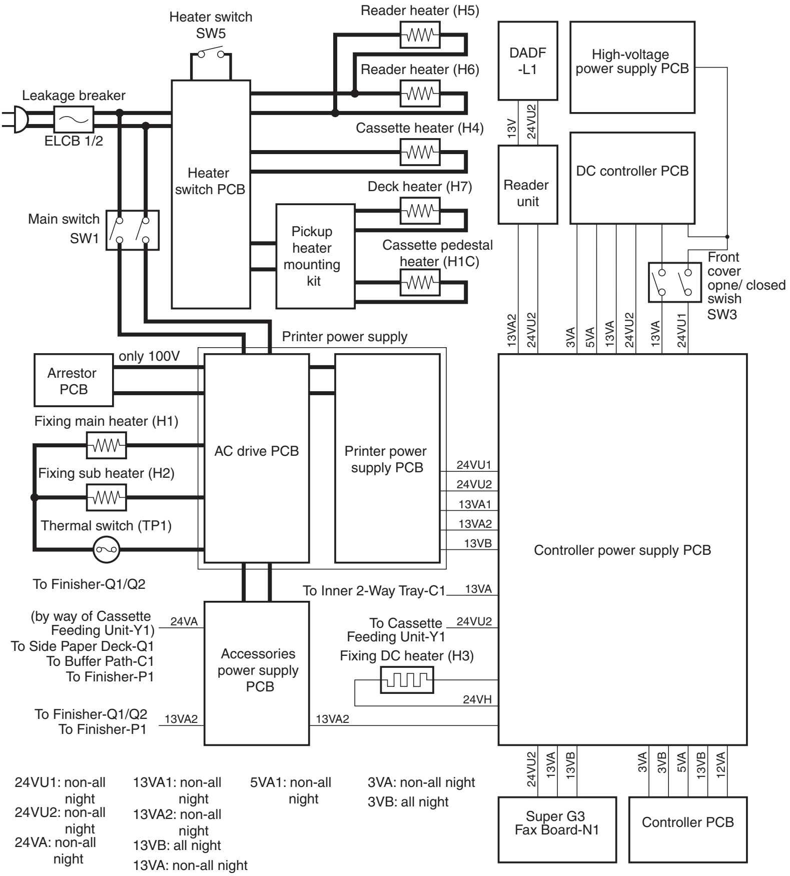
The machine's DC power is supplied by the printer power supply PCB. The DC power to its accessories is supplied by the accessories power supply PCB.

The functions of the individual power supply PCBs and distribution of power is as follows:

T-10-4

Name	Description	Remarks
Printer power supply PCB	generates DC power (24V, 13V); supplies DC power to the controller power supply PCB and the cassette pedestal.	
Accessories power supply PCB	supplies DC power to the side paper deck, buffer path, and finisher.	
Main switch	turns on and off AC power to the AC driver PCB.	
Cover switch	turns on and off 24 VU1/13 VA to the DC controller PCB.	
Leakage breaker	cuts power in the event of an error.	
Environment heater switch PCB	turns on and off power to the cassette heater, reader heater, and deck heater.	100/230V accessory
High-voltage power supply PCB	generates various high-voltage power.	
AC driver PCB	supplies AC power to the printer power supply PCB; drives the fixing system.	

Name	Description	Remarks
Controller power supply PCB	supplies DC power to the inner 2-way tray, fax board, controller, DC controller PCB, and fixing heat retention heater (H3). generates DC power (13V, 5V, 3.3V).	

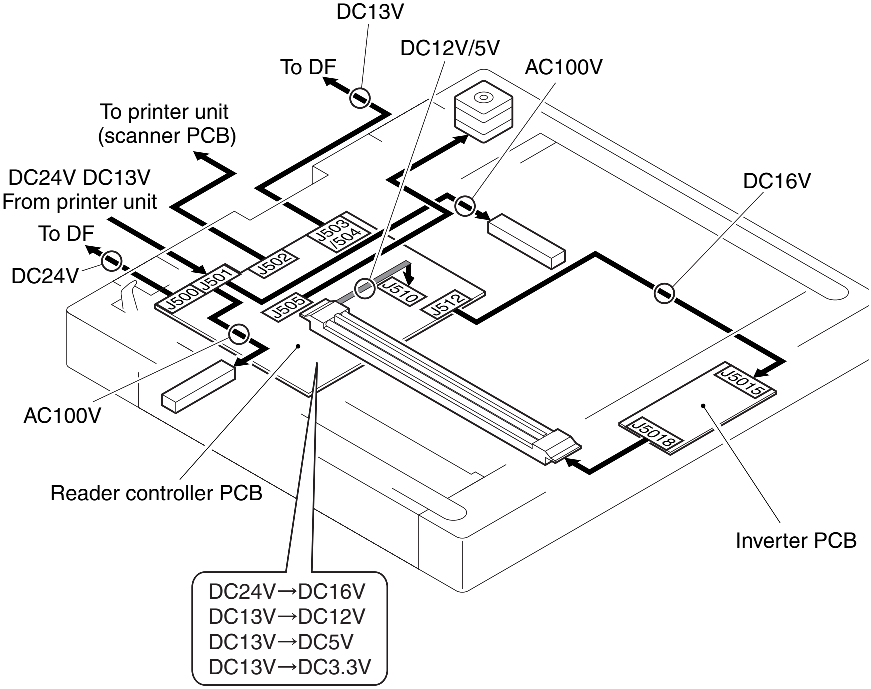

Heater switch SW5
Reader heater (H5)
Reader heater (H6)
Leakage breaker
ELCB 1/2
Cassette heater (H4)
Heater switch PCB
Deck heater (H7)
Main switch SW1
Pickup heater mounting kit
Cassette pedestal heater (H1C)
DADF -L1
High-voltage power supply PCB
13V
24VU2
Reader unit
DC controller PCB
Front cover opne/ closed swish SW3
13VA2
24VU2
3VA
5VA
13VA
24VU2
13VA
24VU1
Printer power supply
only 100V
Arrestor PCB
Fixing main heater (H1)
Fixing sub heater (H2)
Thermal switch (TP1)
AC drive PCB
Printer power supply PCB
24VU1
24VU2
13VA1
13VA2
13VB
Controller power supply PCB
To Finisher-Q1/Q2
(by way of Cassette Feeding Unit-Y1)
To Side Paper Deck-Q1
To Buffer Path-C1
To Finisher-P1
24VA
Accessories power supply PCB
To Inner 2-Way Tray-C1
13VA
To Cassette Feeding Unit-Y1
24VU2
Fixing DC heater (H3)
24VH
To Finisher-Q1/Q2
To Finisher-P1
13VA2
13VA2
24VU2
13VA
13VB
3VA
3VB
5VA
13VB
12VA
Super G3 Fax Board-N1
Controller PCB
24VU1: non-all night
24VU2: non-all night
24VA: non-all night
13VA1: non-all night
13VA2: non-all night
13VB: all night
13VA: non-all night
5VA1: non-all night
3VA: non-all night
3VB: all night

F-10-5

10.4.1.2 Route of Power to the Reader Unit

The reader controller PCB uses the 24/13 VDC from the printer unit to generate the following DC voltages:

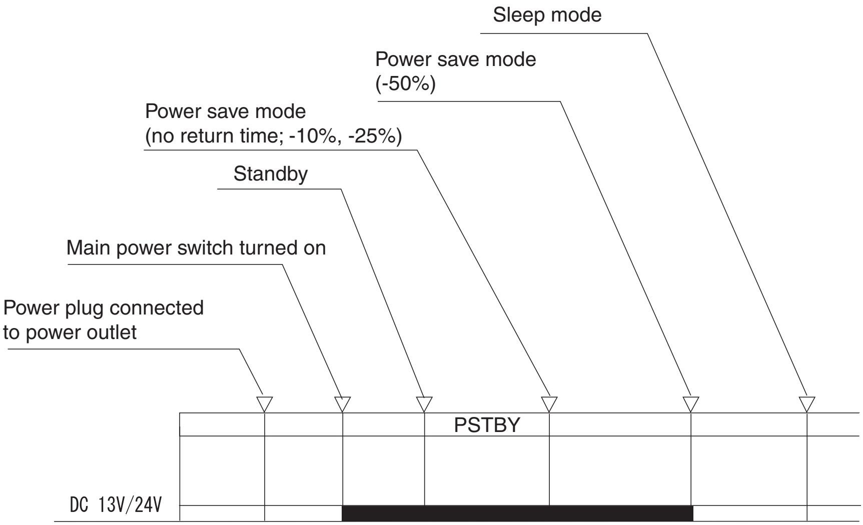
- 16 VDC (for scanning lamp)
- 12 VDC (for CCD)
- 5 VDC (for sensor)
- 3.3 VDC (for IC)


DC13V
To DF
DC12V/5V
AC100V
To printer unit
(scanner PCB)
DC24V DC13V
From printer unit
To DF
DC24V
DC16V
J503/504
J502
J501
J500
J505
J510
J512
J5015
J5018
AC100V
Reader controller PCB
Inverter PCB
DC24V→DC16V
DC13V→DC12V
DC13V→DC5V
DC13V→DC3.3V

F-10-6

10.4.1.3 Timing of Supplying Power to the Reader Unit

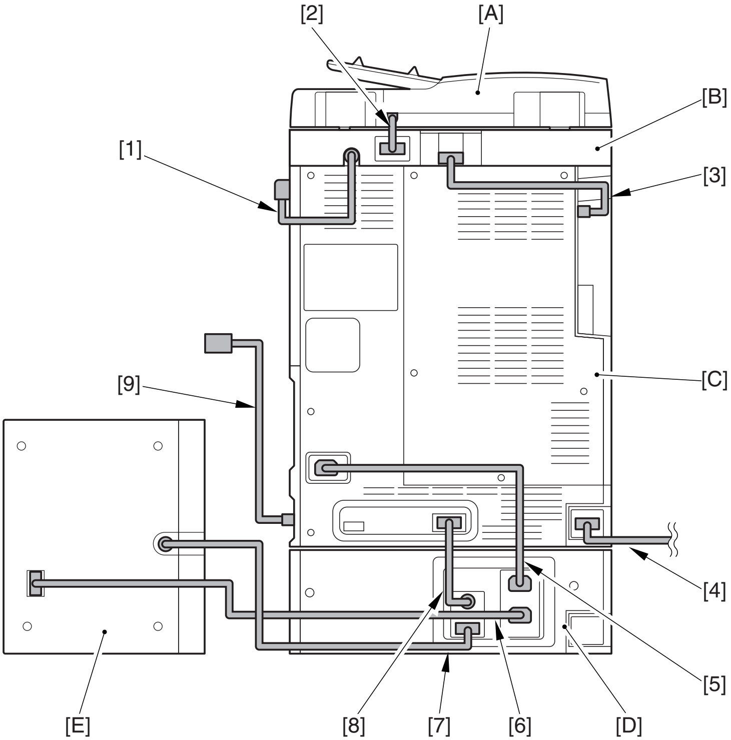
The reader unit is supplied with 24/13 VDC by the printer unit at the following timing:


Sleep mode
Power save mode (-50%)
Power save mode (no return time; -10%, -25%)
Standby
Main power switch turned on
Power plug connected to power outlet
PSTBY
DC 13V/24V

F-10-7

10.4.1.4 Routes of Power to various Options

The power from the printer unit to the accessories is routed as follows:



F-10-8

[1] Reader unit power cable

[2] DADF I/F cable

[3] DDIS cable

[4] Finisher-Q1/Saddle /Finisher-Q2 I/F cable

[5] Pickup heater cable

[6] Side deck heater cable

[7] Side deck I/F cable

[8] Cassette pedestal I/F cable

[9] AC input

[A] DADF-L1

[B] Reader unit

[C] Printer unit
[D] Cassette Feeding Unit-Y1
[E] Paper Deck-Q1

10.4.2 Rated Output of DC Power Supply PCB

10.4.2.1 Rated Output of the Printer Unit Power Supply PCB

The ratings and the power tolerances of the printer power supply PCB are as follows:

T-10-5

Output name	13VA	13VB	24VU1	24VU2
all-night/non-all night	non-all night	all night	non-all night	
rated output	13.2 V	13.2 V	24 V	
power supply tolerance	±3%	±3%	±5%	
		+3%, -5% (between 4.7 A and 5.2 A)	+8%, -6% (between 8 A and 10 A)	
			+8%, -6% between 0 A and 0.1 A)	

10.4.2.2 Rated Output of the Controller Power Supply PCB

The ratings and the power tolerances of the controller power supply PCB are as follows:

T-10-6

Output name	3VA	3VB	5VA	12VA	24VH
all night/non-all night	non-all night	all night	non-all night	non-all night	non-all night
rated output	3.4V	3.4V	5.1V	12V	24V
power supply tolerance	±4%	±4%	±3%	±5%	±7%
				+5%, -6% (between 2A and 2.5A)	

10.4.2.3 Rated Output of the Options Power Supply PCB

The ratings and the power tolerances of the accessories power supply PCB are as follows:

T-10-7

Output name	24VA
all all/non-all night	non-all night
rated output	24V
power tolerances	±5%
	+8%, -6% (between 6.5A and 12A)
	+8%, -6% (between 0A and 0.1A)

10.4.3 Protection Function

10.4.3.1 Protective Functions

The machine's DC power supply PCB and those of its accessories are equipped with protective functions against excess current and voltage, which will automatically cut off the output voltage in response to an error power condition (caused, for example, by a short-circuit on a load).
If any of these protective mechanism has gone on, turn off the main power switch of the printer unit, and remove the cause of activation; then, leave the machine alone for about 3 min, and turn its power back on to reset it.

10.4.4 Backup Battery

10.4.4.1 Backup Battery

The SRAM PCB on the machine's controller PCB and the DC controller PCB are equipped with a lithium battery (1 pc. each) to serve as a source of power, backing up various data in the even of power failure.

T-10-8

SRAM PCB	manganese dioxide lithium battery (3 V, 1000 mAh)
DC controller PCB	lithium battery (3 V, 560 mAh)
Life	Both types of batteries are expected to last for 10 yr or more (with the power plug disconnected).
Replacement	The batteries cannot be replaced on their own in the field.

⚠

Be sure to exercise care whenever you have to replace the battery. In certain cases, it may explode.
Do not use a battery which is not of a type specifically indicated (same name, or equivalent).
Dispose of any used battery according to the instructions of its manufacturer.

10.4.5 Energy-Saving Function

10.4.5.1 Overview

1. Standby Mode

In standby mode, the machine is more or less ready to start a job, i.e., all its components are supplied with power.

2. Power Save Mode

The control mechanism in which the machine's power status is changed (including power save, low power, sleep states) are generically referred to as power save mode. The machine automatically moves through the following states: power save>low power>sleep.

T-10-9

Power save mode	Shift	The machine moves through these different states in response to a press on the Save Power key on the control panel.
	Description	The machine saves power according to the settings made in Additional Function (-10%, -25%, -50%). For a saving by -10% or -25%, the output of the fixing heat retention the heater (H3) is decreased; or its output is turned off. For a saving by -50%, the fixing heat retention heater (H3) is turned off and, at the same time, the power to the accessories (except the fax unit) is turned off.

T-10-10

Low power mode (at time of shipment)	shift	The machine moves through different states in response to the passage of times programmed in advance.
	Description	The machine performs its power save functions in keeping with the requirements of the Energy Star standards. It controls the fixing temperature to 175 deg C. The machine uses the same output states as it uses for a saving by -50%, but uses different fixing AC heater control temperatures (H1/H2).

T-10-11

Sleep mode	Shift	The machine moves through different sates in response to the passage of times selected in Additional Function or in response to a press on the control panel software power switch.
	Description	In sleep mode 1, the DC controller PCB and the main controller PCB are supplied with power. In sleep mode 2, the main controller PCB is supplied with power. In both sleep modes 1 and 2, the power to the fixing AC heater is off.

3. AC Off Mode

The machine remains in this sate when its main power switch remains off. All its power and heater control mechanisms also remain off.

10.4.5.2 Power Supply and Heater Control

The machine's power supply conditions and its fixing heater states are as follows:

- Standby Mode, Power State Mode (-105, -25%, -50%)

T-10-12

			Standby mode	**Power save mode**		
				-10%	-25%	-50%
		remote 1	ON	ON	ON	ON
		remote 2	ON	ON	ON	OFF
reader unit	non-all night	13VA2	ON	ON	ON	OFF
	non-all night	24VU2	ON	ON	ON	OFF

			Standby mode	**Power save mode**		
DC controller PCB	non-all night	3VA	ON	ON	ON	ON
	non-all night	5VA	ON	ON	ON	ON
	non-all night	13VA1	ON	ON	ON	ON
	non-all night	24VU1	ON	ON	ON	OFF
	non-all night	24VU2	ON	ON	ON	OFF
controller PCB	non-all night	3VA	ON	ON	ON	ON
	all night	3VB	ON	ON	ON	ON
	non-all night	5VA	ON	ON	ON	ON
	all night	13VB	ON	ON	ON	ON
	non-all night	12VA	ON	ON	ON	ON
fax	non-all night	13VA1	ON	ON	ON	ON
	all night	13VB	ON	ON	ON	ON
	non-all night	24VU2	ON	ON	ON	OFF
fixing AC heater (H1/H2) control			190 deg C	190 deg C	190 deg C	166 deg C
fixing heat retention heater (H3) control			repeats remaining on for 4.2 sec and off for 1.6 sec	repeats remaining on for 2.8 sec and off for 2.3 sec	OFF	OFF

- Low Power Mode, Sleep Mode, AC Off Mode

T-10-13

			Low power mode	**Sleep mode**		**AC off mode**
				1	2	
		remote 1	ON	ON	OFF	OFF

			Low power mode	**Sleep mode**		**AC off mode**
		remote 2	OFF	OFF	OFF	OFF
reader unit	non-all night	13VA2	OFF	OFF	OFF	OFF
	non-all night	24VU2	OFF	OFF	OFF	OFF
DC controller PCB	non-all night	3VA	ON	ON	OFF	OFF
	non-all night	5VA	ON	ON	OFF	OFF
	non-all night	13VA1	ON	ON	OFF	OFF
	non-all night	24VU1	OFF	OFF	OFF	OFF
	non-all night	24VU2	OFF	OFF	OFF	OFF
controller PCB	non-all night	3VA	ON	ON	OFF	OFF
	all night	3VB	ON	ON	ON	OFF
	non-all night	5VA	ON	ON	OFF	OFF
	all night	13VB	ON	ON	ON	OFF
	non-all night	12VA	ON	ON	OFF	OFF
fax	non-all night	13VA1	ON	ON	OFF	OFF
	all night	13VB	ON	ON	ON	OFF
	non-all night	24VU2	OFF	OFF	OFF	OFF
fixing AC heater (H1/H2) control			175 deg C	OFF	OFF	OFF
fixing heat retention heater (H3) control			OFF	OFF	OFF	OFF

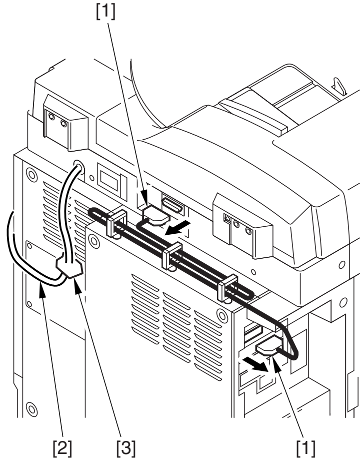
10.5 Parts Replacement Procedure

10.5.1 Option Power Supply Assembly

10.5.1.1 Removing the Rear Cover

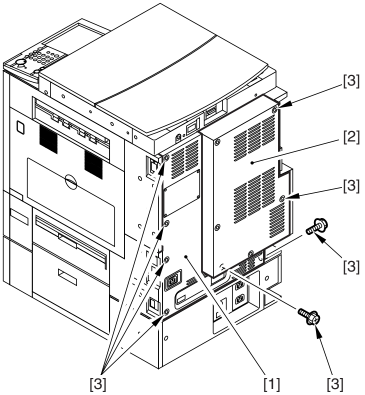
1) Disconnect the 2 connectors [1] of the reader communication cable.

2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-9

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])

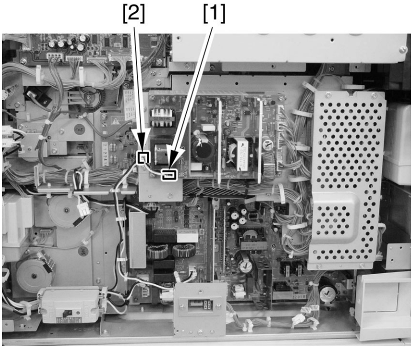


F-10-10

10.5.1.2 Removing the Accessories Power Supply

1) Disconnect J6401 [1] of the accessories power supply.

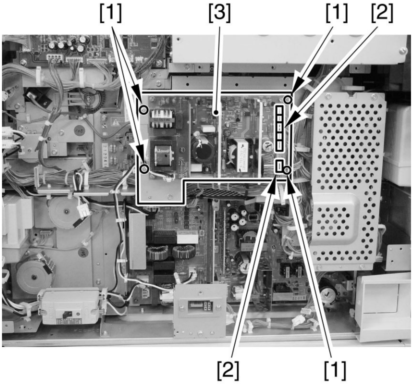
2) Free the relay harness from the clamp [2] of the accessories power supply.



F-10-11

3) Disconnect the 6 connectors [2] of the machine harness from the accessories power supply.

4) Remove the 4 TP screws (M3x6) [1], and detach the accessories power supply [3].

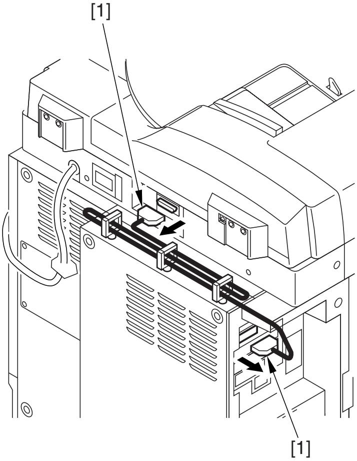


F-10-12

10.5.2 Controller Power Supply Unit

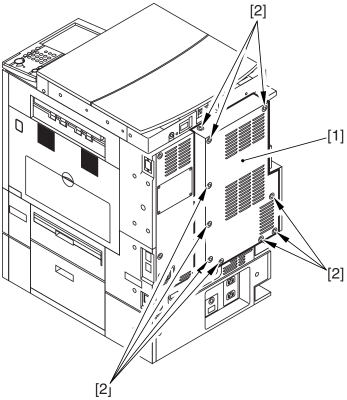
10.5.2.1 Removing the Rear Cover (right)

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-10-13

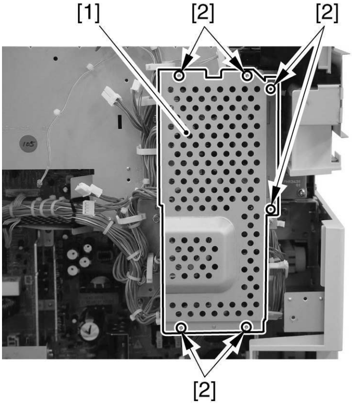
2) Remove the rear cover (right) [1]. (9 screws [3])



F-10-14

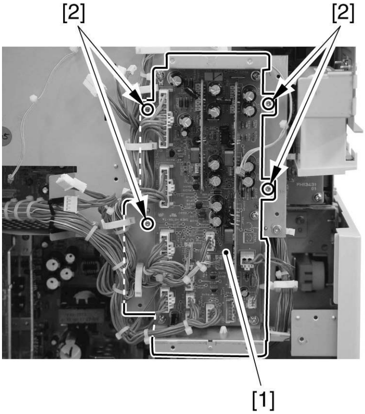
10.5.2.2 Removing the Controller Power Supply

1) Remove the controller power supply cover [1] in upward direction. (6 screws [2])



F-10-15

2) Remove the controller power supply [1]. (15 connectors, 5 clamps, 4 screws [2])

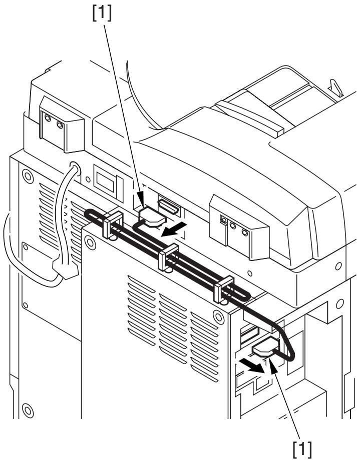


F-10-16

10.5.3 Printer Power Supply Unit

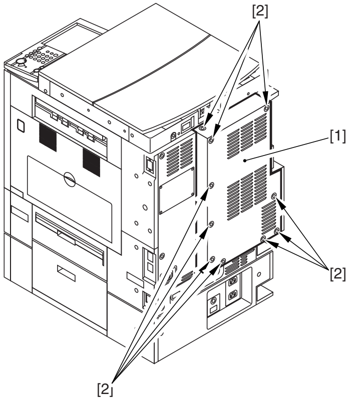
10.5.3.1 Removing the Rear Cover (right)

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-10-17

2) Remove the rear cover (right) [1]. (9 screws [3])

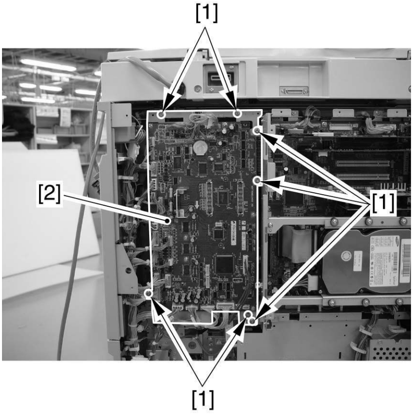


F-10-18

10.5.3.2 Removing the Controller Box

1) Remove the 7 screws [1].

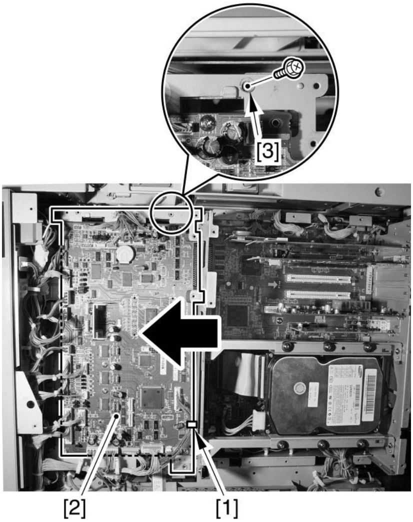
⚠Free the DC controller PCB base [2]. (You need not detach it.)



F-10-19

2) Free the wire saddle [1], and slide the DC controller PCB base [2] in the direction of the arrow.

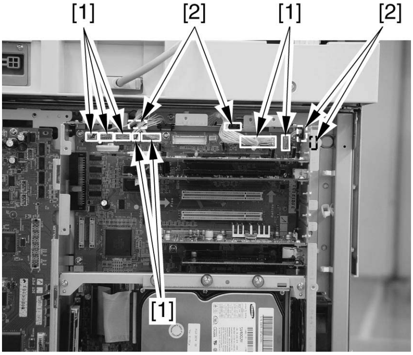
Fit the removed screw in the hole [3]; then, temporarily fix the DC controller PCB base [2] in place.



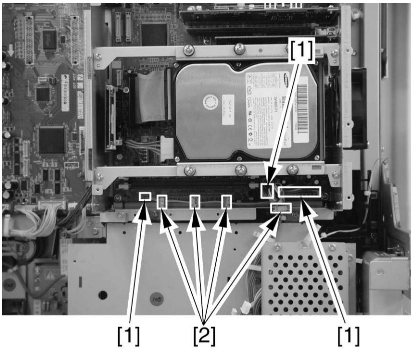
F-10-20

3) Disconnect the 10 connectors [1] of the main controller PCB; then, remove the 8 wire saddles.

⚠If a fax unit is installed, you will have to disconnect 12 connectors in the case of a Japanese model or 11 connectors in the case of a non-Japanese model.

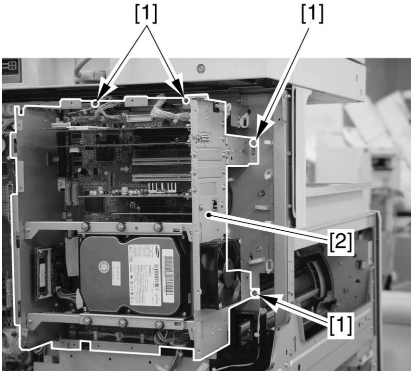


F-10-21

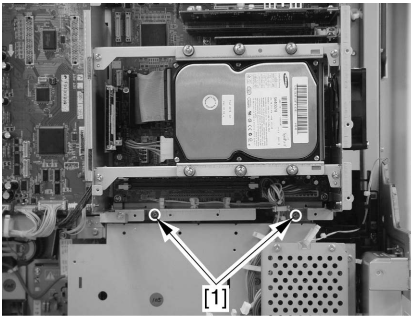


F-10-22

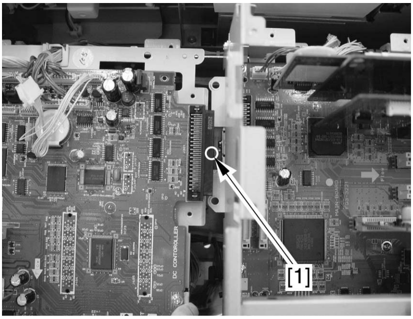
4) Remove the 7 screws, and detach the controller box [2].



F-10-23

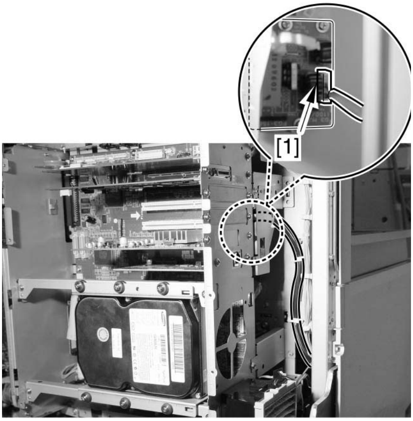


F-10-24



F-10-25

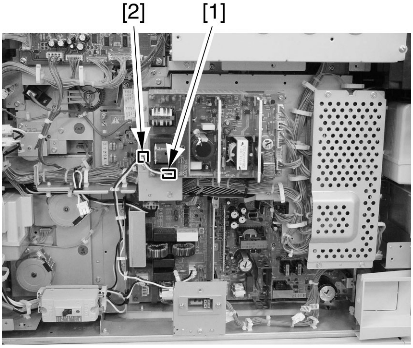
⚠If a fax unit is installed, you will find a connector [1] on the modular PCB found behind the controller box. Be sure to disconnect this connector before detaching the controller box from the machine.



F-10-26

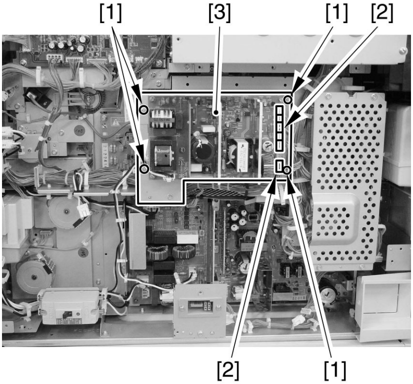
10.5.3.3 Removing the Accessories Power Supply

1) Disconnect J6401 [1] of the accessories power supply.
2) Free the relay harness from the clamp [2] of the accessories power supply.



F-10-27

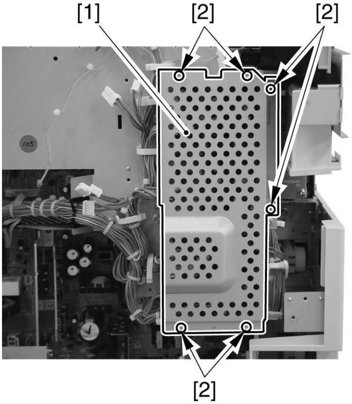
3) Disconnect the 6 connectors [2] of the machine harness from the accessories power supply.
4) Remove the 4 TP screws (M3x6) [1], and detach the accessories power supply [3].



F-10-28

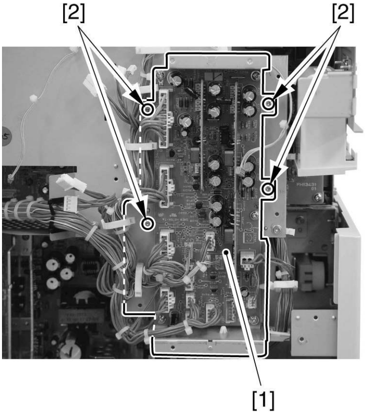
10.5.3.4 Removing the Controller Power Supply

1) Remove the controller power supply cover [1] in upward direction. (6 screws [2])



F-10-29

2) Remove the controller power supply [1]. (15 connectors, 5 clamps, 4 screws [2])



F-10-30

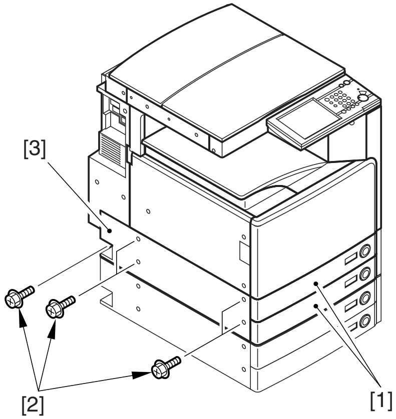
10.5.3.5 Removing the Left Cover (lower)

1) Disconnect the lattice connector [1] to the finisher. (if equipped with Finisher-Q1 or Saddle Finisher-Q2)
Or, remove the cover of the lattice connector.

Memo:
Depending on the specifications of the machine, you may not find a lattice connector.

2) Remove the cassettes 1 and 2 [1].

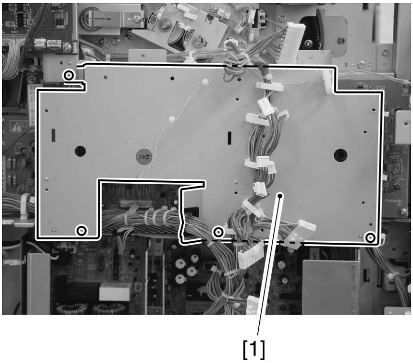
3) Remove the 4 screws [2], and detach the lower right cover [3].



F-10-31

10.5.3.6 Removing the Printer Unit Power Supply

1) Remove the HVT cover [1]. (5 screws [2], 8 clamps)



F-10-32

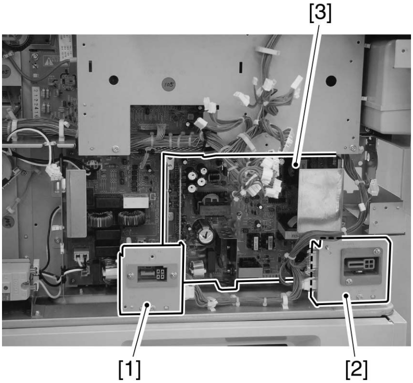
2) Disconnect the lattice connector [1] (1

screws) to the cassette pedestal and the lattice connector [2] (1 screw) to the finisher.

3) Remove the printer unit power supply [3]. (3 connectors, 4 screws)

Memo

Depending on the specifications of the machine, you may not find the lattice connector.



F-10-33

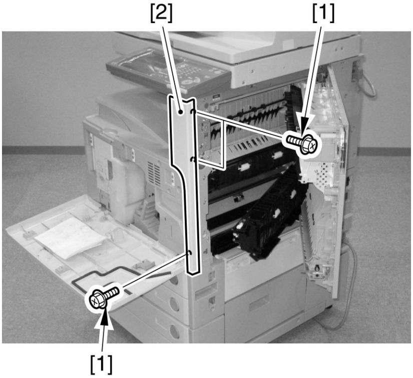
10.5.4 Control Panel

10.5.4.1 Removing the Support Cover (right)

1) Open the right door.

2) Open the front cover.

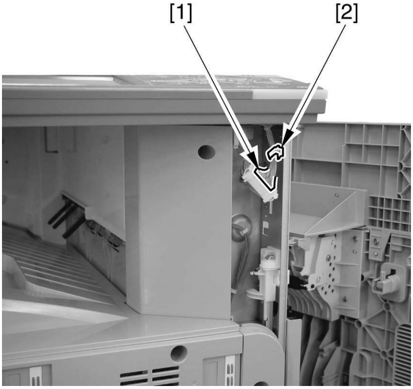
3) Remove the 3 screws [1], and detach the support cover (right) [2].



F-10-34

10.5.4.2 Removing the Control Panel

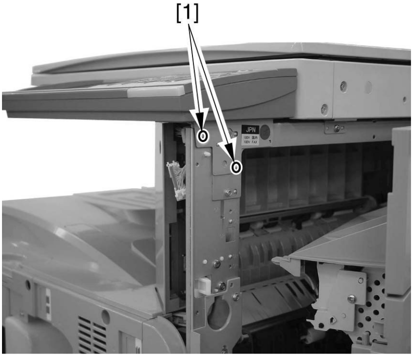
1) Disconnect the connector [1] of the control panel cable, and free the harness [2] from the clamp.



F-10-35

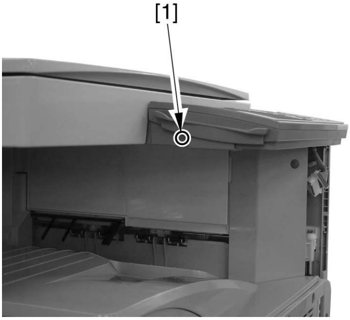
2) Remove the 2 screws [1] from the right

side of the control panel.



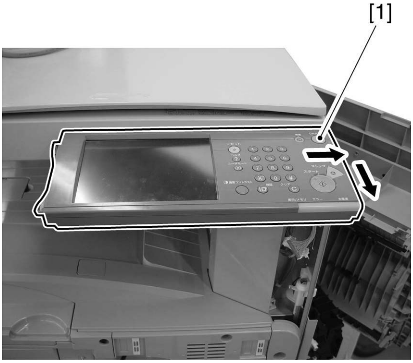
F-10-36

3) Remove the screw cover [1] from the left side of the control panel, and remove the screw from the rear.



F-10-37

4) Shift the control panel [1] to the right, and detach it toward the front.



F-10-38

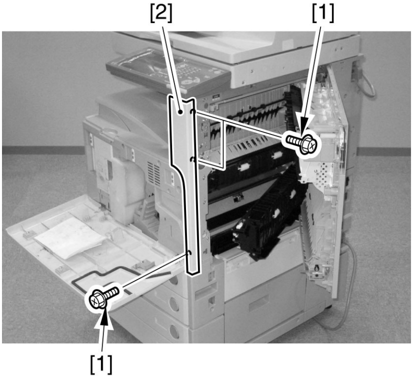
10.5.5 Control Panel LCD Unit

10.5.5.1 Removing the Support Cover (right)

1) Open the right door.

2) Open the front cover.

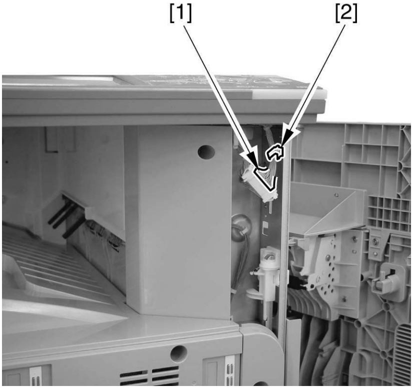
3) Remove the 3 screws [1], and detach the support cover (right) [2].



F-10-39

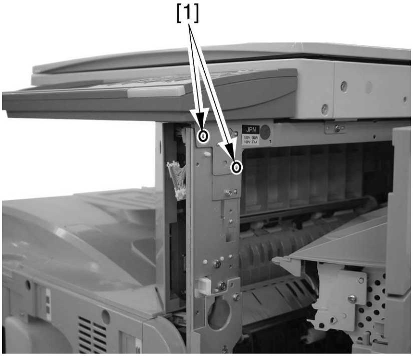
10.5.5.2 Removing the Control Panel

1) Disconnect the connector [1] of the control panel cable, and free the harness [2] from the clamp.



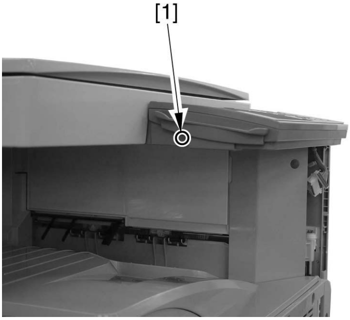
F-10-40

2) Remove the 2 screws [1] from the right side of the control panel.



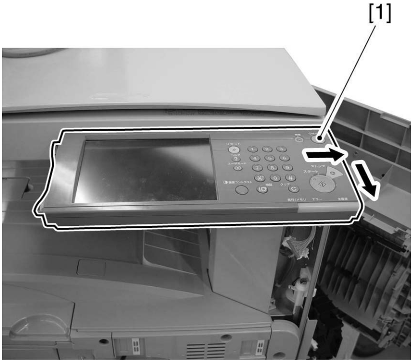
F-10-41

3) Remove the screw cover [1] from the left side of the control panel, and remove the screw from the rear.



F-10-42

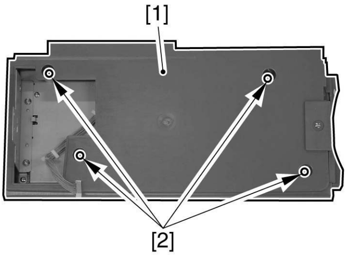
4) Shift the control panel [1] to the right, and detach it toward the front.



F-10-43

10.5.5.3 Removing the Control Panel Lower Cover

1) Remove the control panel lower cover [1]. (4 TP screws [2])



F-10-44

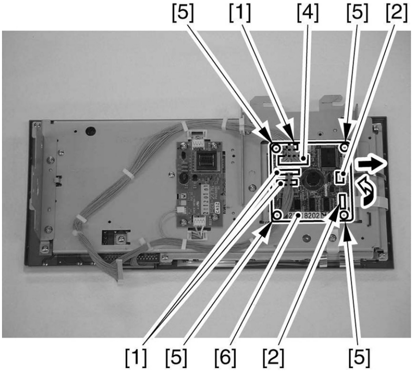
10.5.5.4 Removing the Control Panel LCD

1) Disconnect the 2 connectors [1] of the cable used between the control panel PCB and the control panel key switch PCB; then, free the cable from the 2 clamps [2].

2) Disconnect the 2 connectors used between the control panel PCB and the control panel LCD.

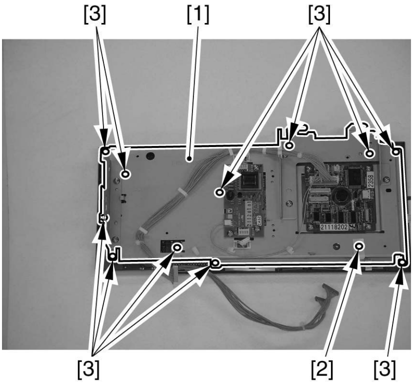
⚠Be sure to move the stopper in the direction of the arrow. Each stopper has its own direction of movement.

3) Disconnect the 2 connectors [3] of the control panel inverter PCB.



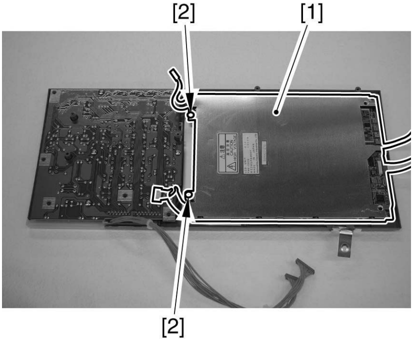
F-10-45

4) Remove the control panel inside frame [1]. (1 TP screw [2], 11 self-tapping screws [3])



F-10-46

5) Remove the control panel LCD [1]. (2 self-tapping screws [2]).



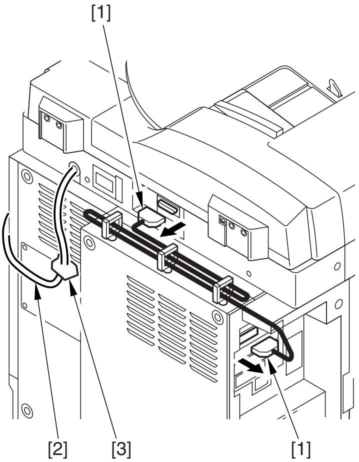
F-10-47

10.5.6 DC Controller PCB

10.5.6.1 Removing the Rear Cover

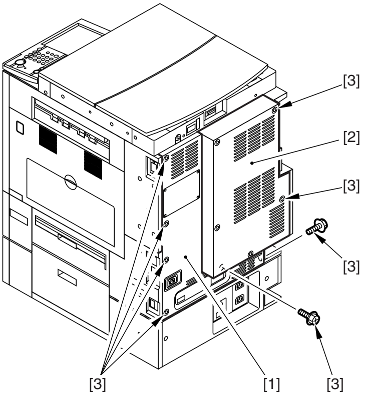
1) Disconnect the 2 connectors [1] of the reader communication cable.

2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-48

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



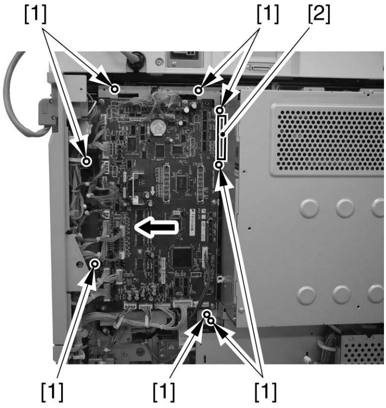
F-10-49

10.5.6.2 Removing the DC Controller PCB

1) Disconnect all connectors of the DC controller PCB.

2) Remove the 8 TP screws [1] of the DC controller PCB base.

3) Shift the DC controller PCB together with the base to the left to disconnect the connector [2] to the controller PCB.



F-10-50

4) Remove the DC controller PCB together with the base toward the front.

10.5.6.3 When Replacing the DC Controller

⚠Before replacing the DC controller PCB, generate the latest P-PRINT printout:

COPIER>FUNCTION>MISC-P>P-PRINT

1) Download the latest system software by the SST.

2) After replacing the DC controller, initialize the memory of the DC controller PCB using the following service mode item:

COPIER>FUNCTION>CLEAR>DC-CON

3) Enter the values indicated on the service label using the following service mode items:

- COPIER>ADJUST>LASER>**LA-DELAY**
- COPIER>ADJUST>IMG-REG>
  REG-V-Y,M,K
  REG2-V-Y,M,K
- COPIER>ADJUST>DENS>
  SGNL-Y,M,C
  REF-Y,M,C
- COPIER>ADJUST>HV-PRI>
  OFST1-AC
  PRI-GAIN
  PRI-OFST
- COPIER>ADJUST>HV-TR>
  1TR-GAIN,OFST
  2TR-GAIN,OFST
- COPIER>ADJUST>CST-ADJ>
  MF-A4R,A6R,A4
- COPIER>ADJUST>FEED-ADJ>

REGIST

ADJ-C1,C2,MF,C1RE,C2RE,C3RE,C4RE

ADJ-DKRE,MFRE,RG-REFE

4) If any value is recorded in the Remarks field of the service label, enter the value in service mode.

5) Enter the counter backup data indicated in the P-PRINT printout using the following service mode items:

COPIER>COUNTER>MISC>FX-UP-RL

COPIER>COUNTER>MISC>DV-UNT-K

6) Enter the drum film thickness current value in service mode. (The drum film thickness current value is indicated on the drum counter label attached to the front of the drum unit.)

COPIER>ADJUST>HV-PRI>DR-I-INT

F-10-51

7) Turn off the control panel power switch.

8) Turn off and then on the main power switch.

9) Execute the following service mode item of the drum film thickness level setting:

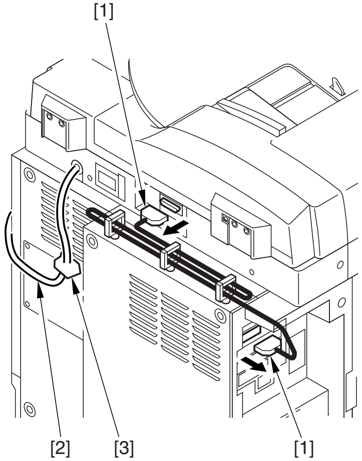
COPIER>ADJUST>HVT-PRI>DRM-CHK

10.5.7 Leakage Breaker

10.5.7.1 Removing the Rear Cover

1) Disconnect the 2 connectors [1] of the reader communication cable.

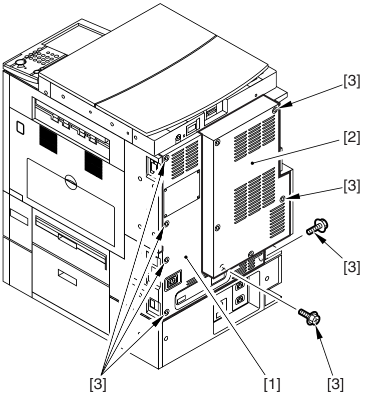
2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-52

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same

time. (9 screws [3])

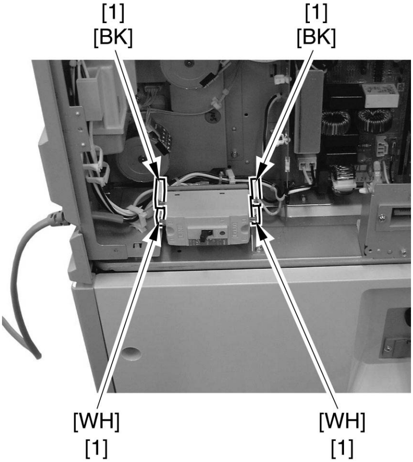


F-10-53

10.5.7.2 Removing the Leakage Breaker

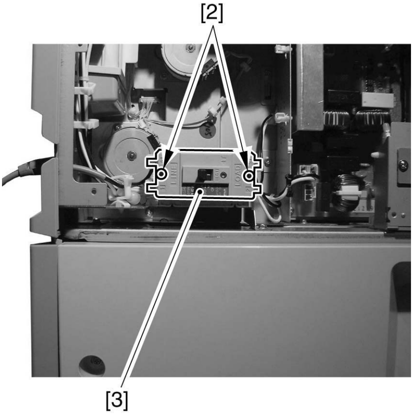
1) Remove the 4 fastons [1].

⚠The cords connected to the fastons are color-coded; be sure the colors are correctly matched when connecting them once again.



F-10-54

2) Remove the 2 screws [2], and detach the leakage breaker [3].

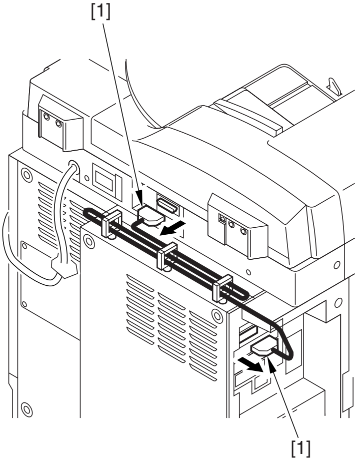


F-10-55

10.5.8 HVT PCB

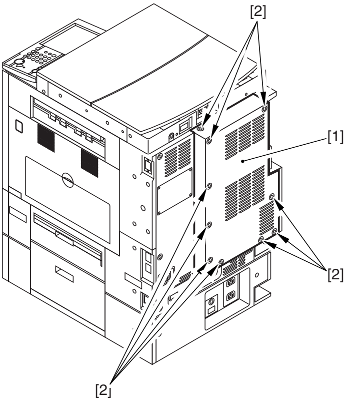
10.5.8.1 Removing the Rear Cover (right)

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-10-56

2) Remove the rear cover (right) [1]. (9 screws [3])

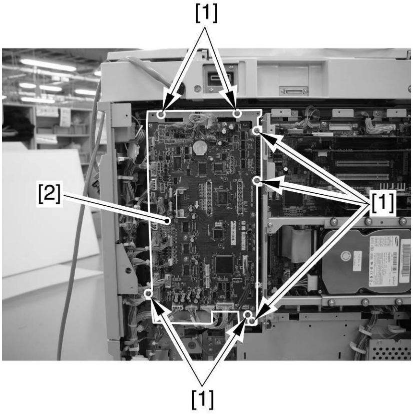


F-10-57

10.5.8.2 Removing the Controller Box

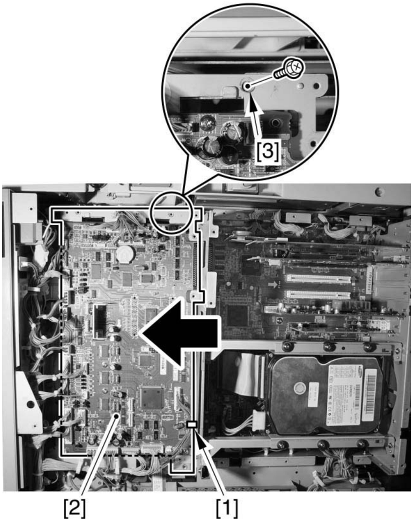
1) Remove the 7 screws [1].

⚠Free the DC controller PCB base [2]. (You need not detach it.)



F-10-58

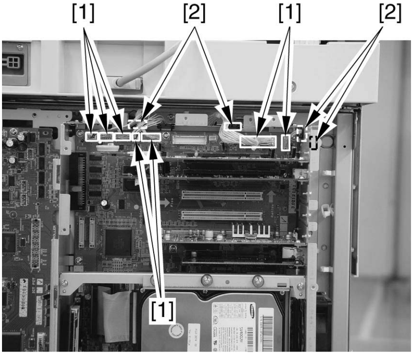
2) Free the wire saddle [1], and slide the DC controller PCB base [2] in the direction of the arrow.
Fit the removed screw in the hole [3]; then, temporarily fix the DC controller PCB base [2] in place.



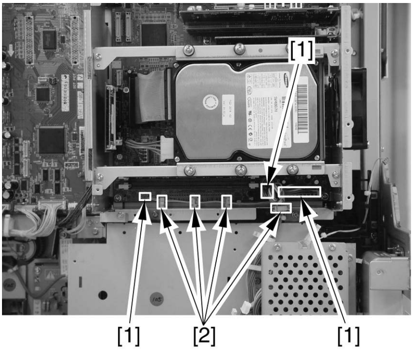
F-10-59

3) Disconnect the 10 connectors [1] of the main controller PCB; then, remove the 8 wire saddles.

⚠If a fax unit is installed, you will have to disconnect 12 connectors in the case of a Japanese model or 11 connectors in the case of a non-Japanese model.

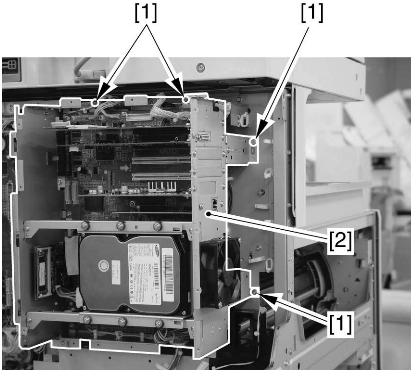


F-10-60

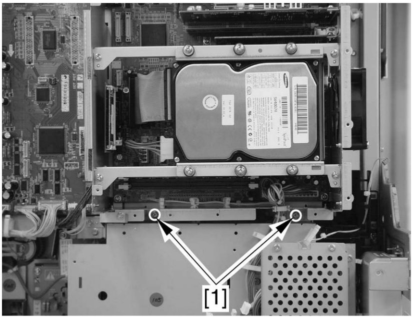


F-10-61

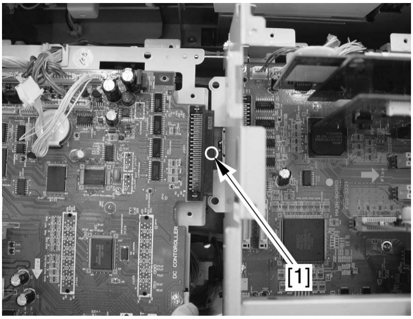
4) Remove the 7 screws, and detach the controller box [2].



F-10-62

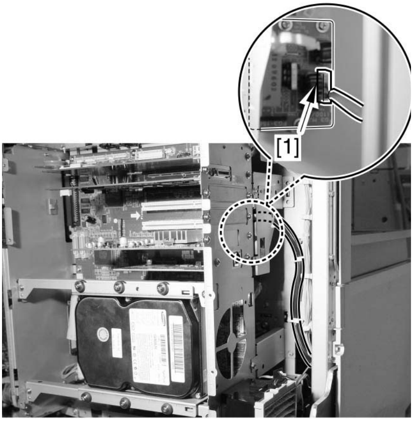


F-10-63



F-10-64

⚠If a fax unit is installed, you will find a connector [1] on the modular PCB found behind the controller box. Be sure to disconnect this connector before detaching the controller box from the machine.

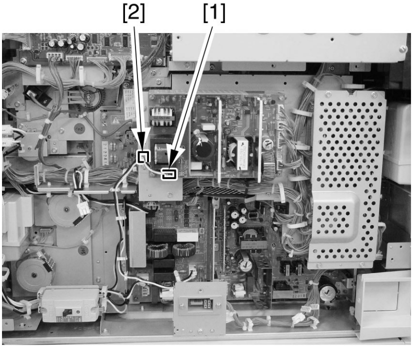


F-10-65

10.5.8.3 Removing the Accessories Power Supply

1) Disconnect J6401 [1] of the accessories power supply.

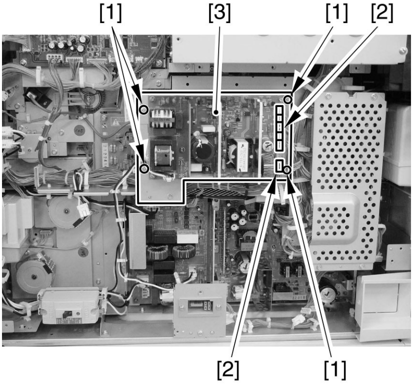
2) Free the relay harness from the clamp [2] of the accessories power supply.



F-10-66

3) Disconnect the 6 connectors [2] of the machine harness from the accessories power supply.

4) Remove the 4 TP screws (M3x6) [1], and detach the accessories power supply [3].

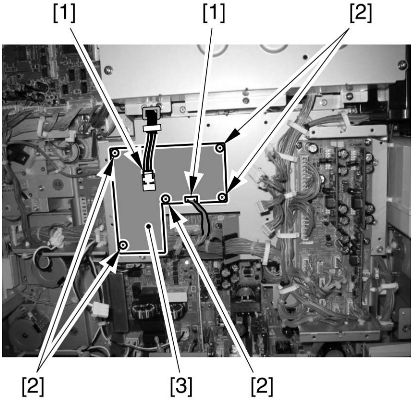


F-10-67

10.5.8.4 Removing the High-Voltage Sub PCB

1) Disconnect the 2 connectors [1] from the high-voltage sub PCB.

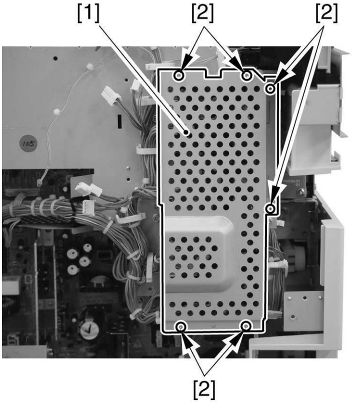
2) Remove the 5 supports [2] from the high-voltage sub PCB [3].



F-10-68

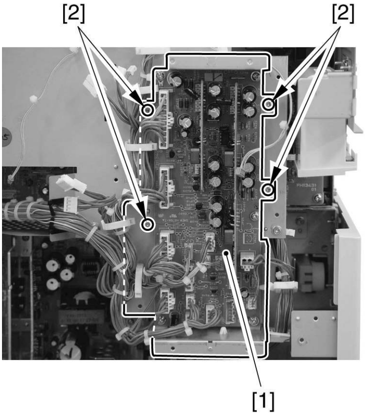
10.5.8.5 Removing the Controller Power Supply

1) Remove the controller power supply cover [1] in upward direction. (6 screws [2])



F-10-69

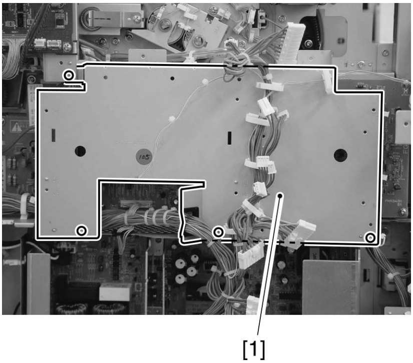
2) Remove the controller power supply [1]. (15 connectors, 5 clamps, 4 screws [2])



F-10-70

10.5.8.6 Removing the Printer Power Supply

1) Remove the HVT cover [1]. (5 screws [2], 8 clamps)



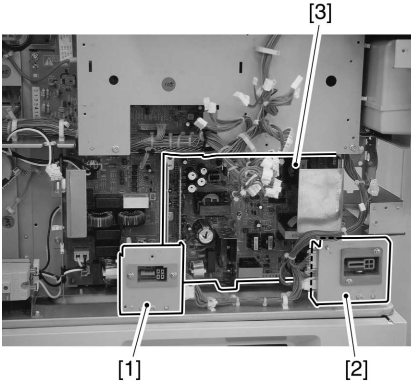
F-10-71

2) Disconnect the lattice connector [1] (1 screws) to the cassette pedestal and the lattice connector [2] (1 screw) to the finisher.

3) Remove the printer unit power supply [3]. (3 connectors, 4 screws)

Memo

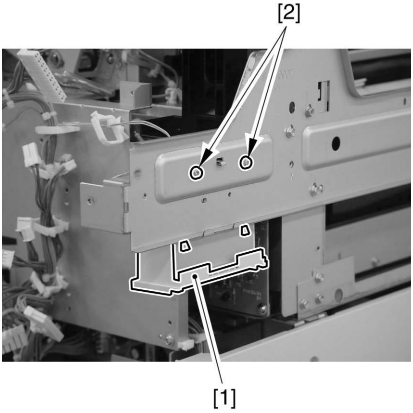
Depending on the specifications of the machine, you may not find the lattice connector.



F-10-72

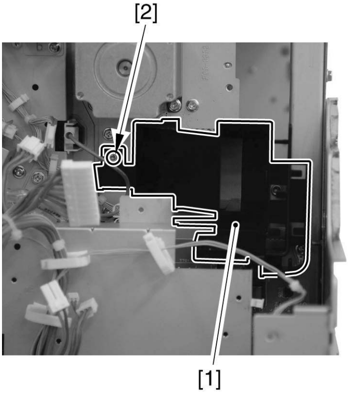
10.5.8.7 Removing the HVT PCB

1) Remove the right rear grip [1]. (2 screws [2])



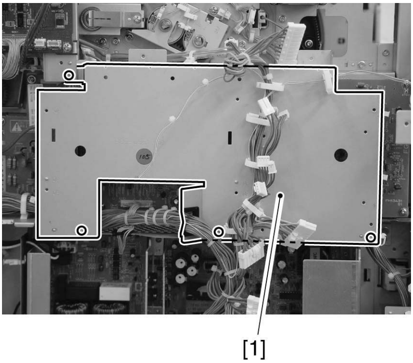
F-10-73

2) Remove the fan duct [1]. (1 screws [2])



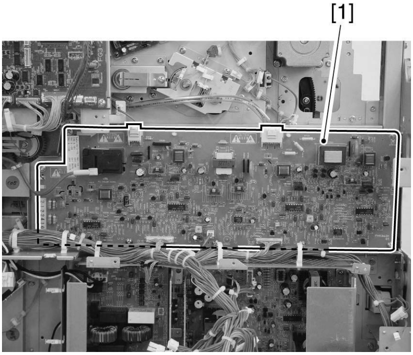
F-10-74

3) Remove the HVT cover [1]. (5 screws [2], 8 clamps)



F-10-75

4) Remove the HVT PCB [1]. (5 connectors, 8 screws, 2 PCB supports)



F-10-76

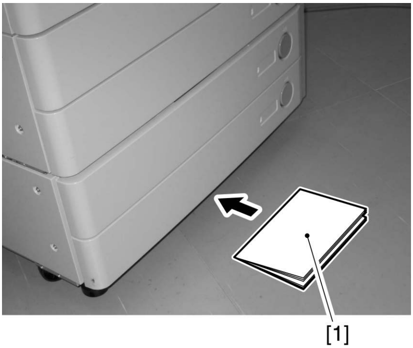
10.5.8.8 When Replacing the HVT PCB

1) Enter the appropriate information using the following 6 service mode items by going through the instructions indicated on the label attached to the HVT PCB:

COPIER> ADJUST> HV-PRI> PRI-GAIN (CHG G)
COPIER> ADJUST> HV-PRI> PRI-OFST (CHG Off)
COPIER> ADJUST> HV-TR> 1TR-GAIN (1TR G)
COPIER> ADJUST> HV-TR> 1TR-OFST (1TR Off)
COPIER> ADJUST> HV-TR> 2TR-GAIN (2TR G)
COPIER> ADJUST> HV-TR> 2TR-OFST (2TR Off)

The notations in parentheses indicate the notations as they appear on the PCB label.

2) Record the new values on the service label.
3) Generate a P-PRINT printout in service mode.
4) Put away the generated P-PRINT printout [1] in the service book case to replace the old printout.

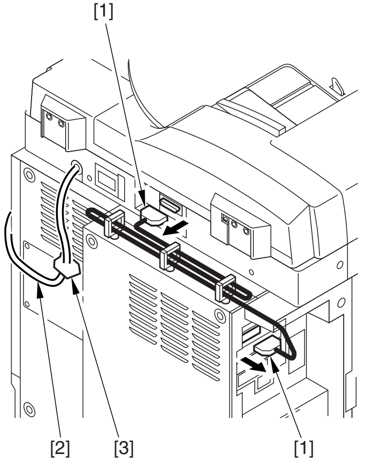


F-10-77

10.5.9 High-Voltage Sub PCB

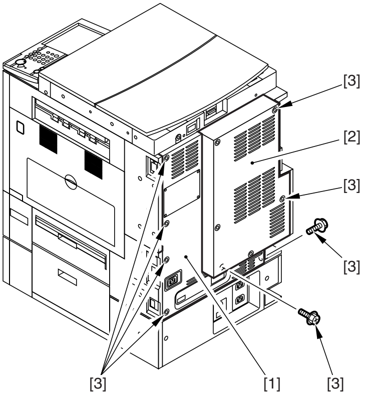
10.5.9.1 Removing the Rear Cover

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-78

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])

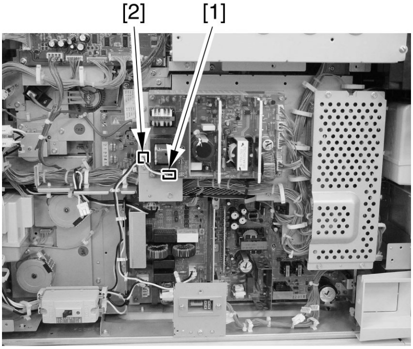


F-10-79

10.5.9.2 Removing the Accessories Power Supply

1) Disconnect J6401 [1] of the accessories power supply.

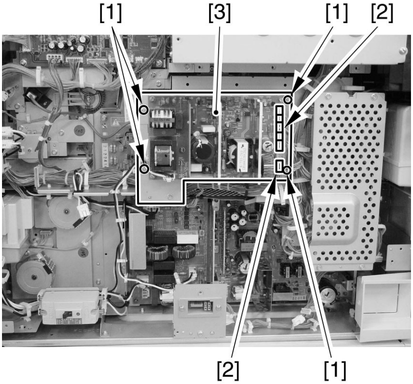
2) Free the relay harness from the clamp [2] of the accessories power supply.



F-10-80

3) Disconnect the 6 connectors [2] of the machine harness from the accessories power supply.

4) Remove the 4 TP screws (M3x6) [1], and detach the accessories power supply [3].

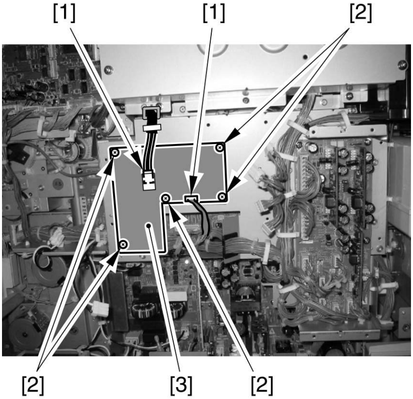


F-10-81

10.5.9.3 Removing the High-Voltage Sub PCB

1) Disconnect the 2 connectors [1] from the high-voltage sub PCB.

2) Remove the 5 supports [2] from the high-voltage sub PCB [3].



F-10-82

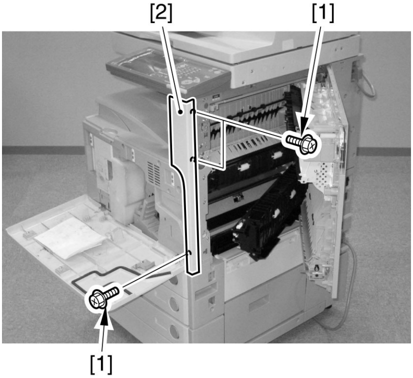
10.5.10 Control Panel CPU PCB

10.5.10.1 Removing the Support Cover (right)

1) Open the right door.

2) Open the front cover.

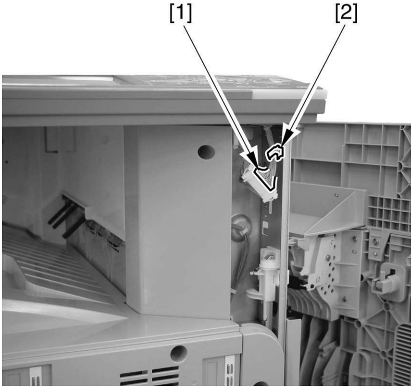
3) Remove the 3 screws [1], and detach the support cover (right) [2].



F-10-83

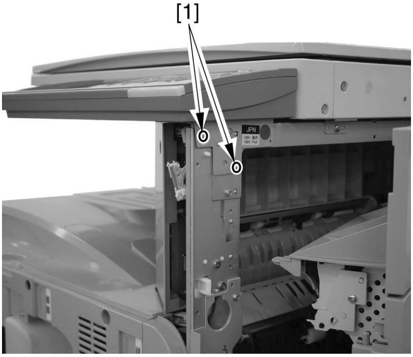
10.5.10.2 Removing the Control Panel

1) Disconnect the connector [1] of the control panel cable, and free the harness [2] from the clamp.



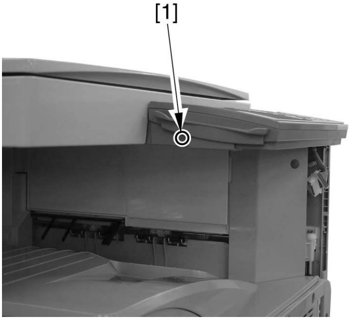
F-10-84

2) Remove the 2 screws [1] from the right side of the control panel.



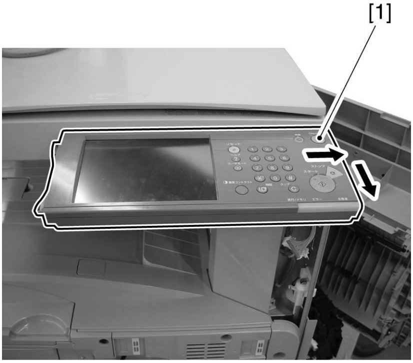
F-10-85

3) Remove the screw cover [1] from the left side of the control panel, and remove the screw from the rear.



F-10-86

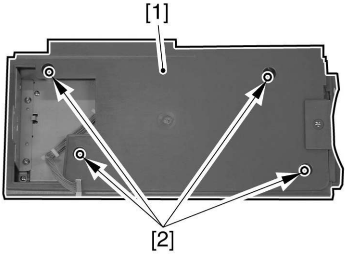
4) Shift the control panel [1] to the right, and detach it toward the front.



F-10-87

10.5.10.3 Removing the Control Panel Lower Cover

1) Remove the control panel lower cover [1]. (4 TP screws [2])



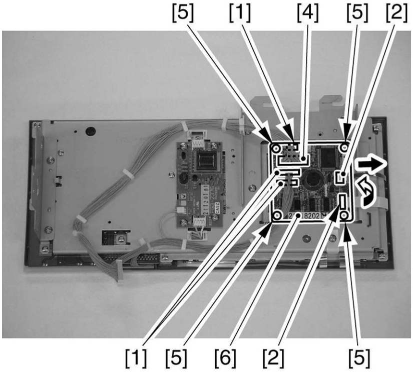
F-10-88

10.5.10.4 Removing the Control Panel CPU PCB

1) Disconnect the 3 connectors [1] of the cable used between control panel PCB and the control panel key switch PCB.
2) Disconnect the 2 connectors [2] used between the control panel PCB and the control panel LCD.

⚠Be sure to move the stopper in the direction of the arrow. Each of the 2 stoppers has its own direction of movement.

3) Disconnect the control panel cable [4].
4) Remove the 4 TP screws [5], and detach the control panel PCB [7].



F-10-89

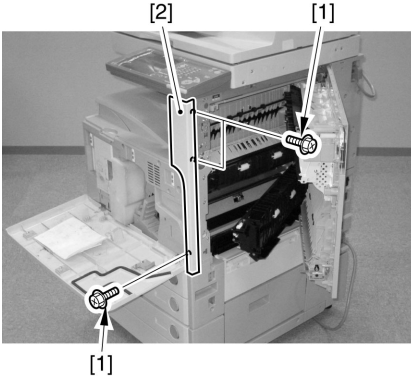
10.5.11 Control Panel Key Switch PCB

10.5.11.1 Removing the Support Cover (right)

1) Open the right door.

2) Open the front cover.

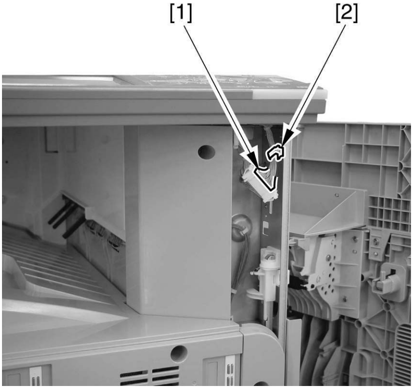
3) Remove the 3 screws [1], and detach the support cover (right) [2].



F-10-90

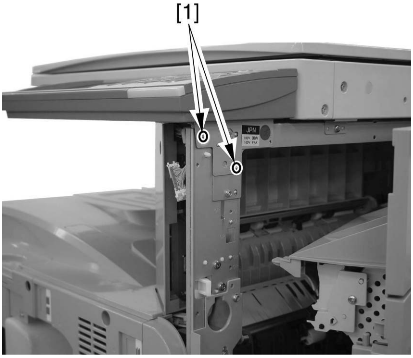
10.5.11.2 Removing the Control Panel

1) Disconnect the connector [1] of the control panel cable, and free the harness [2] from the clamp.



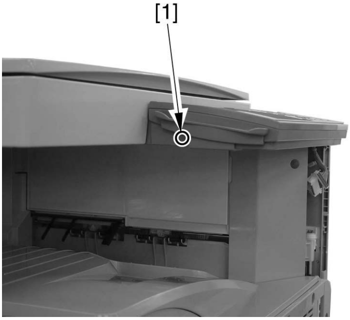
F-10-91

2) Remove the 2 screws [1] from the right side of the control panel.



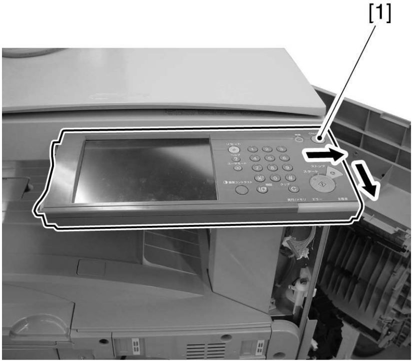
F-10-92

3) Remove the screw cover [1] from the left side of the control panel, and remove the screw from the rear.



F-10-93

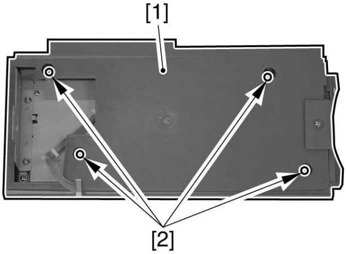
4) Shift the control panel [1] to the right, and detach it toward the front.



F-10-94

10.5.11.3 Removing the Control Panel Lower Cover

1) Remove the control panel lower cover [1]. (4 TP screws [2])



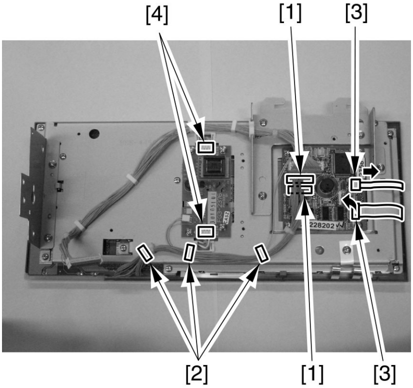
F-10-95

10.5.11.4 Removing the Control Panel Key Switch PCB

1) Disconnect the 2 connectors [1] of the cable used between the control panel PCB and the control panel key switch PCB, and free it from the 3 clamps.
2) Disconnect the 2 connectors [3] used between the control panel PCB and the control panel LCD.

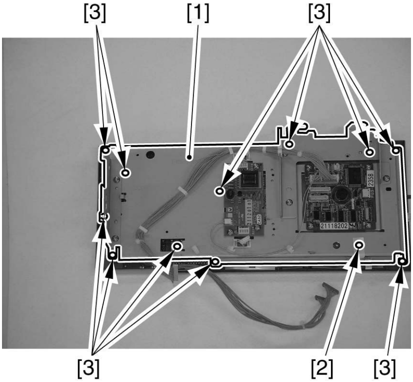
⚠Be sure to move the stopper in the direction of the arrow. Each of the 2 stopper has its own direction of movement.

3) Disconnect the 2 connectors of the control panel inverter PCB.



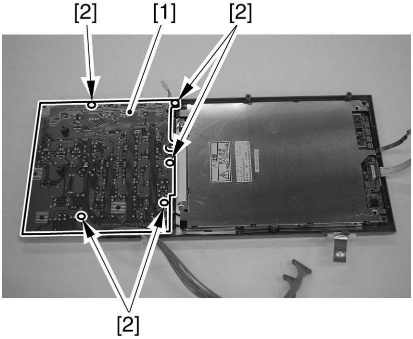
F-10-96

4) Remove the control panel inside frame [1]. (1 TP screw [2], 1 self-tapping screws [3])



F-10-97

5) Remove the control panel key switch PCB [1]. (5 self-tapping screws [2])

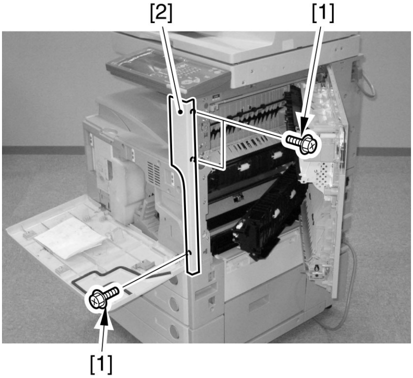


F-10-98

10.5.12 Control Panel Inverter PCB

10.5.12.1 Removing the Support Cover (right)

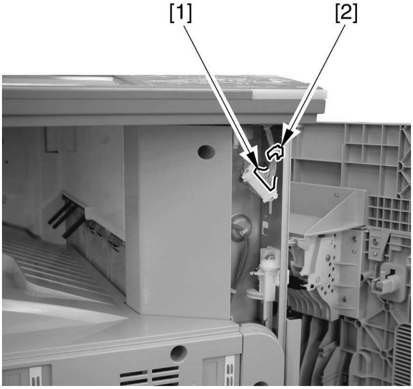
1) Open the right door.
2) Open the front cover.
3) Remove the 3 screws [1], and detach the support cover (right) [2].



F-10-99

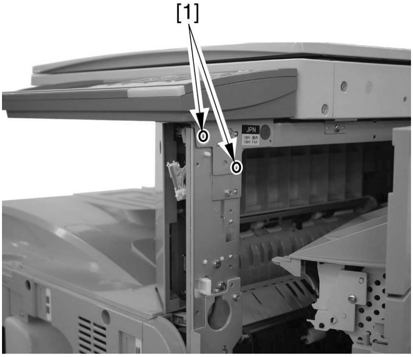
10.5.12.2 Removing the Control Panel

1) Disconnect the connector [1] of the control panel cable, and free the harness [2] from the clamp.



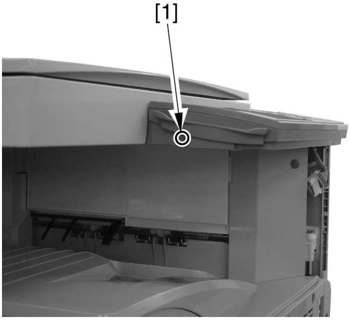
F-10-100

2) Remove the 2 screws [1] from the right side of the control panel.



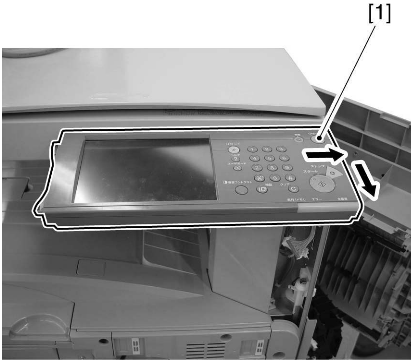
F-10-101

3) Remove the screw cover [1] from the left side of the control panel, and remove the screw from the rear.



F-10-102

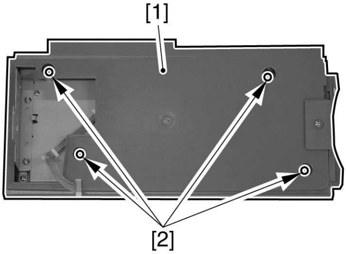
4) Shift the control panel [1] to the right, and detach it toward the front.



F-10-103

10.5.12.3 Removing the Control Panel Lower Cover

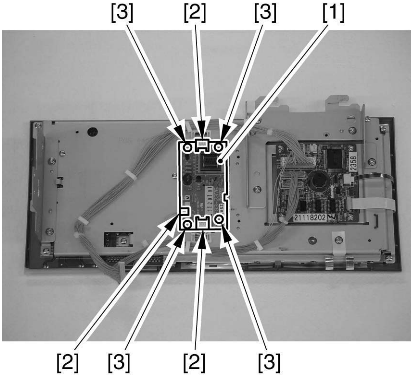
1) Remove the control panel lower cover [1]. (4 TP screws [2])



F-10-104

10.5.12.4 Removing the Control Panel Inverter

1) Remove the control panel inverter PCB [1]. (3 connectors [2], 4 screws [3])



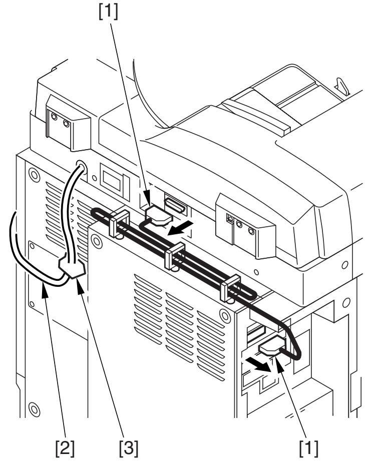
F-10-105

10.5.13 Main Power Switch

10.5.13.1 Removing the Rear Cover

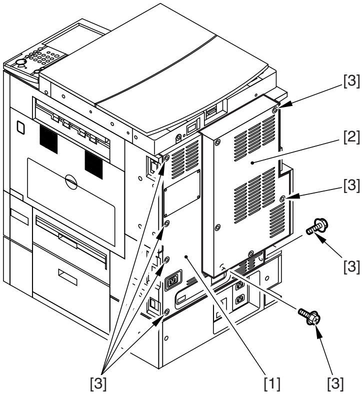
1) Disconnect the 2 connectors [1] of the reader communication cable.

2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-106

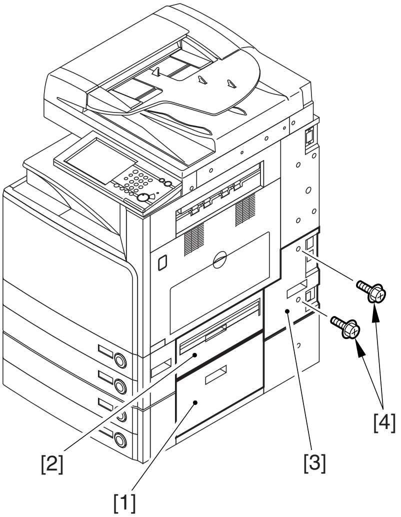
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-10-107

10.5.13.2 Removing the Right Cover (lower rear)

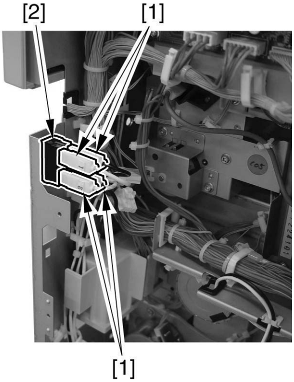
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-10-108

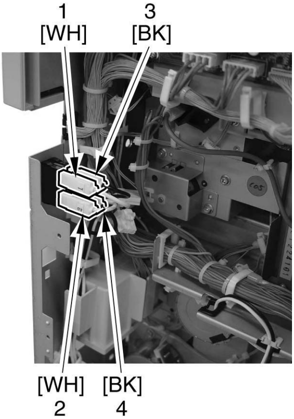
10.5.13.3 Removing the Main Power Switch

1) Remove the 4 fastons [1], and detach the main power switch [2] (snap-on).



F-10-109

⚠When connecting the 4 fastons, be sure that the numbers in the following figure match those on the stickers attached to the fastons.



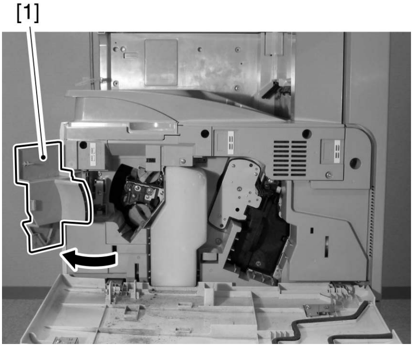
F-10-110

10.5.14 Front Cover Open/ Closed Detecting Switch

10.5.14.1 Removing the Toner Bottle Retainer

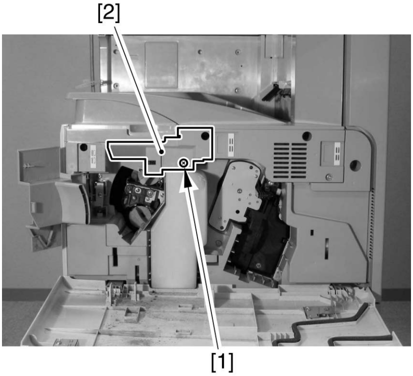
1) Open the front cover.

2) Open the toner container access cover [1].



F-10-111

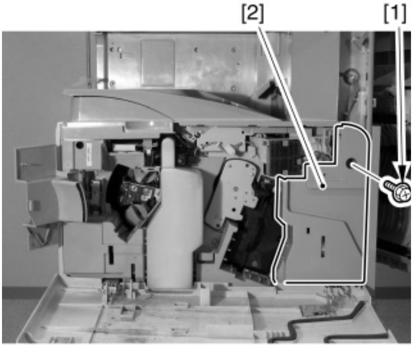
3) Remove the TP screw [1], and detach the waste toner bottle retainer [2].



F-10-112

10.5.14.2 Removing the Inside Front Cover (right)

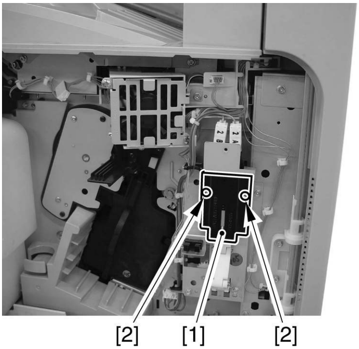
1) Remove the screw [1], and detach the inside front cover (right) [2].



F-10-113

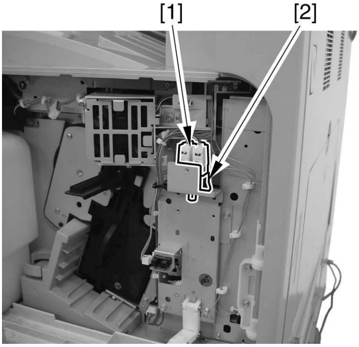
10.5.14.3 Removing the Front Cover Open/ Closed SW

1) Remove the link retainer [1]. (2 screws [2])



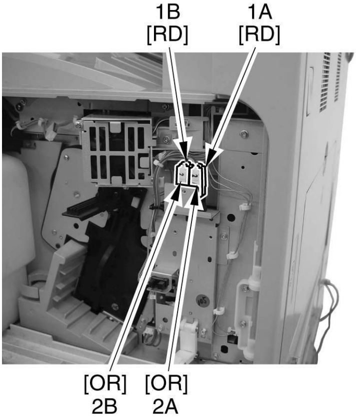
F-10-114

2) Remove the 4 fastons [1], and detach the front cover open/closed switch [2]. (snap-on)



F-10-115

⚠To find the location of each faston, see the number indicated on it.

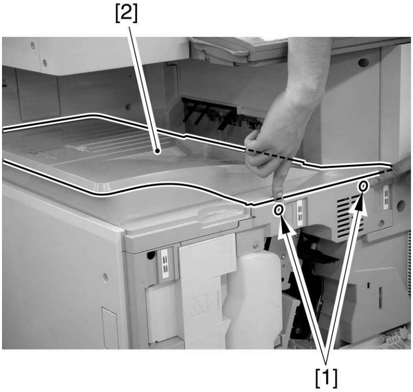


F-10-116

10.5.15 ITB Fan

10.5.15.1 Removing the Delivery Tray

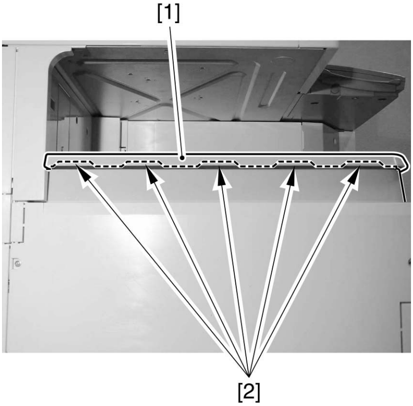
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-10-117

⚠**Points to Note When Mounting the Delivery Tray**

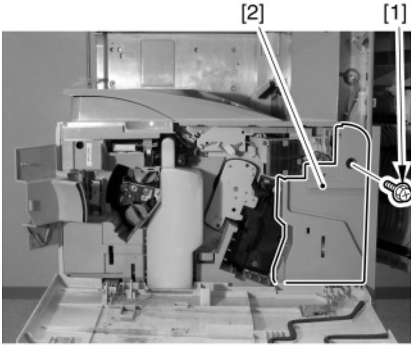
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-10-118

10.5.15.2 Removing the Inside Front Cover (right)

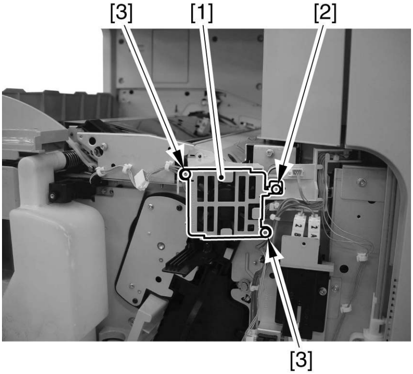
1) Remove the screw [1], and detach the inside front cover (right) [2].



F-10-119

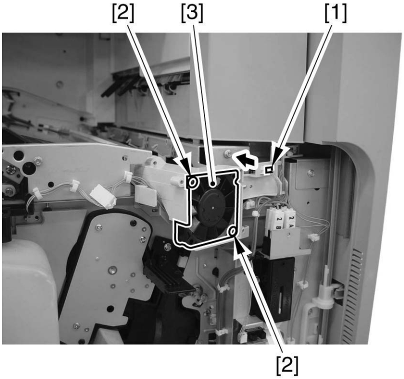
10.5.15.3 Removing the ITB Fan

1) Remove the finger guard [1]. (1 tapping screw [2], 2 self-tapping screws [3])



F-10-120

2) Disconnect the connector [1] in the direction of the arrow, and remove the 2 self-tapping screws [2]; then, detach the ITB fan [3].



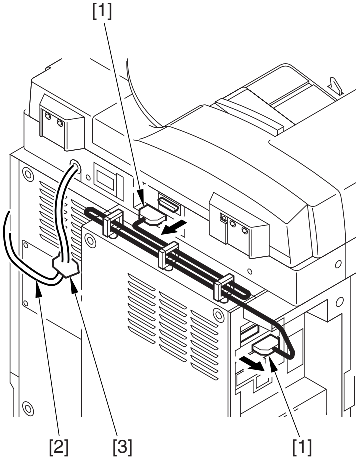
F-10-121

10.5.16 Toner Intake Fan

10.5.16.1 Removing the Rear Cover

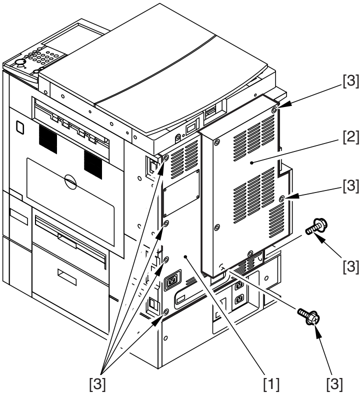
1) Disconnect the 2 connectors [1] of the reader communication cable.

2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-122

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])

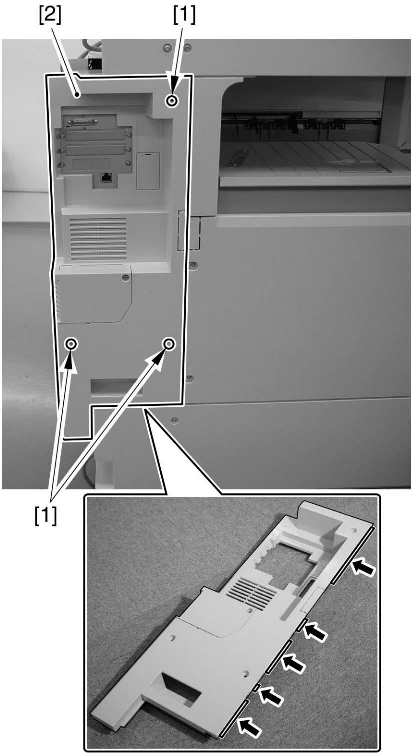


F-10-123

10.5.16.2 Removing the Left Cover (rear)

1) Remove the 3 screws [1], and detach the rear left cover [2].

⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.

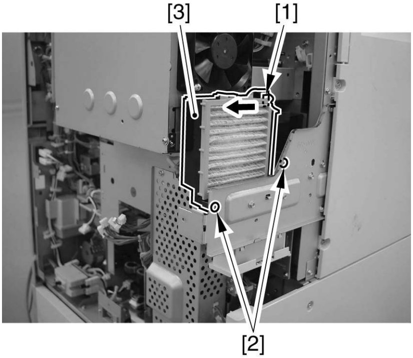


F-10-124

10.5.16.3 Removing the Toner Suction Fan

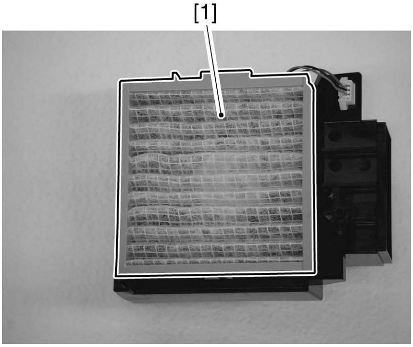
1) Disconnect the connector [1] in the direction of the arrow.

2) Remove the 2 screws [2], and detach the toner suction fan [3] together with its holder.



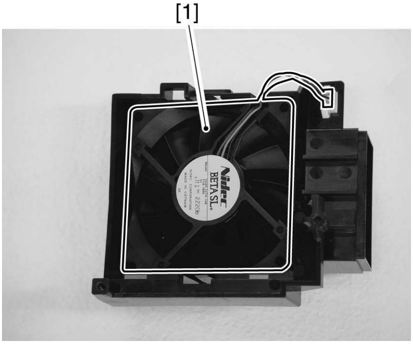
F-10-125

3) Detach the filter [1] from the holder.



F-10-126

4) Detach the toner suction fan [1] from the holder.

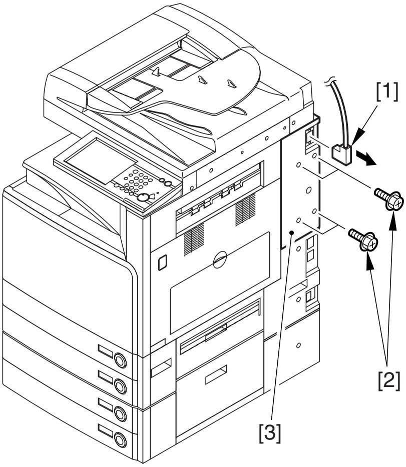


F-10-127

10.5.17 Machine Heat Discharge Fan

10.5.17.1 Removing the Right Cover (upper rear)

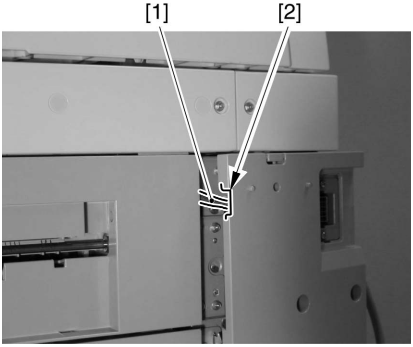
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-10-128

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

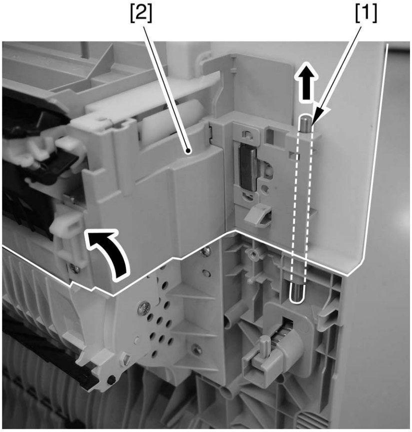


F-10-129

10.5.17.2 Removing the Right Door

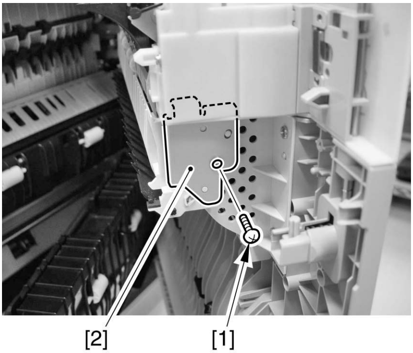
1) Open the right cover.

2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-10-130

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.

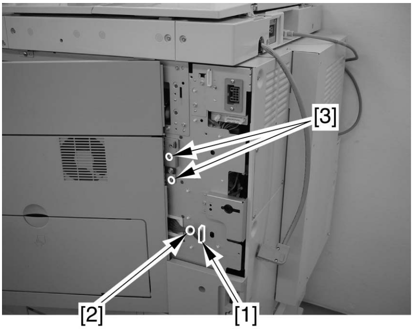


F-10-131

4) Disconnect the connector [1], and remove the clamp [2].

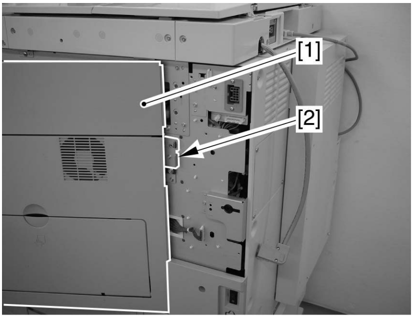
5) Remove the 2 screws [3] used to fix the

hinge in place.



F-10-132

6) Detach the right door [1] together with the hinge [2].

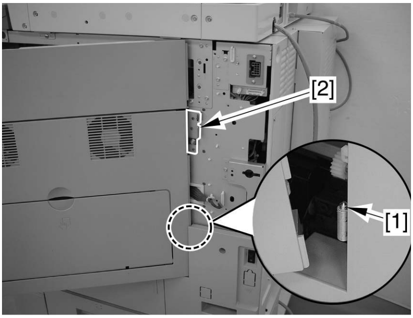


F-10-133

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



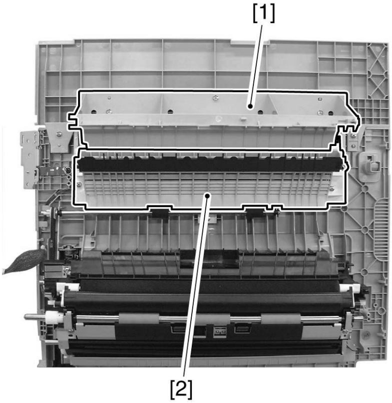
F-10-134

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

10.5.17.3 Removing the Machine Heat Exhaust Fan

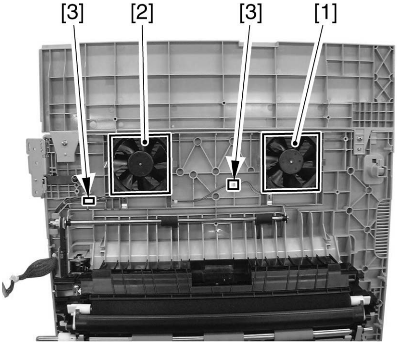
1) Remove the right door feed guide 1 [1]. (3 self-tapping screws; if no relay delivery assembly is used)

2) Remove the right door feed guide 2 [2]. (5 self-tapping screws)



F-10-135

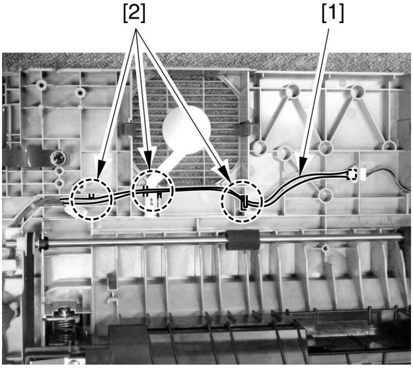
3) Remove the machine fan (front) [1] and the other machine fan (rear) [2]. (1 connector [3] each)



F-10-136

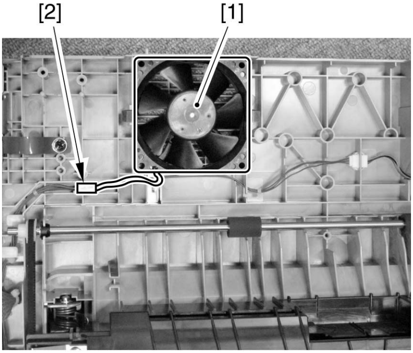
10.5.17.4 Routing the Heat Discharge Fan Harness

1) Route the harness [1] of the machine fan (front) along the harness guides [2].



F-10-137

2) Fit the connector [2] of the machine fan (rear) [1] to the harness guide to keep the harness of the machine fan (front) in place.

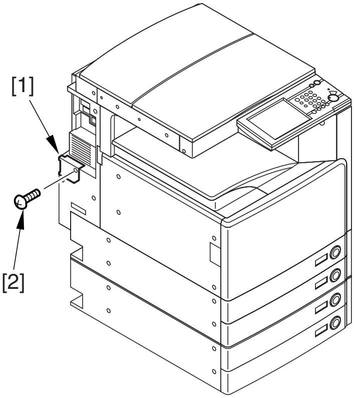


F-10-138

10.5.18 Toner Intake Fan Filter

10.5.18.1 Removing the Toner Suction Fan Cover

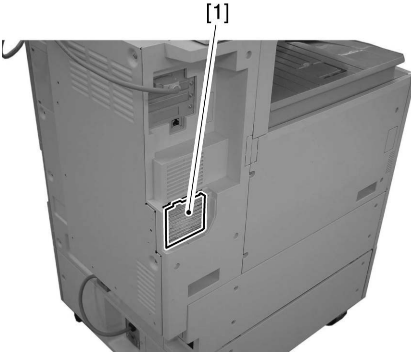
1) Remove the screw [2], and detach the toner suction fan cover [1].



F-10-139

10.5.18.2 Removing the Toner Suction Fan Filter

1) Remove the toner suction fan filter [1] in upward direction.



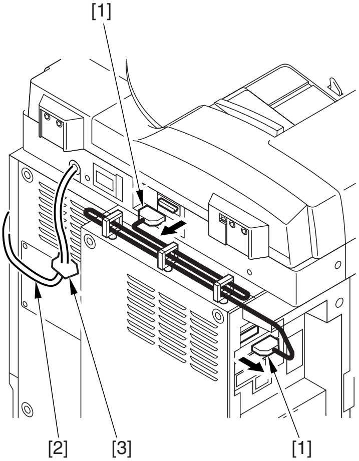
F-10-140

10.5.19 Motor of Main Drive Assembly

10.5.19.1 Removing the Rear Cover

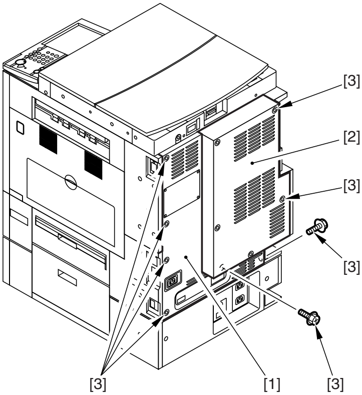
1) Disconnect the 2 connectors [1] of the reader communication cable.

2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-141

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



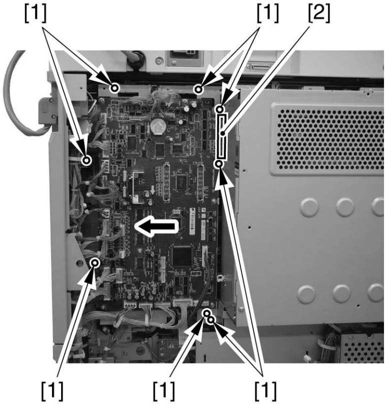
F-10-142

10.5.19.2 Removing the DC Controller PCB

1) Disconnect all connectors of the DC controller PCB.

2) Remove the 8 TP screws [1] of the DC controller PCB base.

3) Shift the DC controller PCB together with the base to the left to disconnect the connector [2] to the controller PCB.



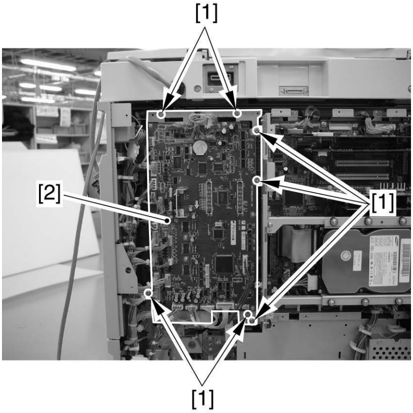
F-10-143

4) Remove the DC controller PCB together with the base toward the front.

10.5.19.3 Removing the Controller Box

1) Remove the 7 screws [1].

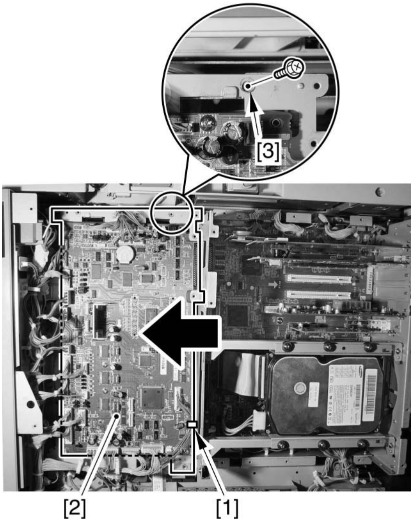
⚠Free the DC controller PCB base [2]. (You need not detach it.)



F-10-144

2) Free the wire saddle [1], and slide the DC controller PCB base [2] in the direction of the arrow.

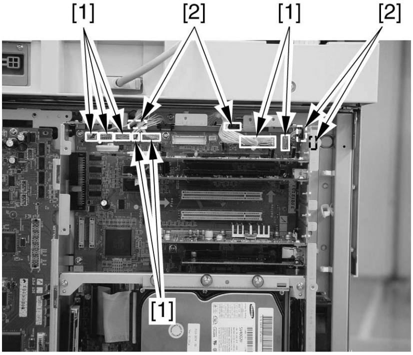
Fit the removed screw in the hole [3]; then, temporarily fix the DC controller PCB base [2] in place.



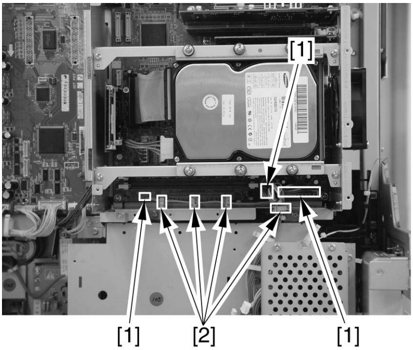
F-10-145

3) Disconnect the 10 connectors [1] of the main controller PCB; then, remove the 8 wire saddles.

⚠If a fax unit is installed, you will have to disconnect 12 connectors in the case of a Japanese model or 11 connectors in the case of a non-Japanese model.

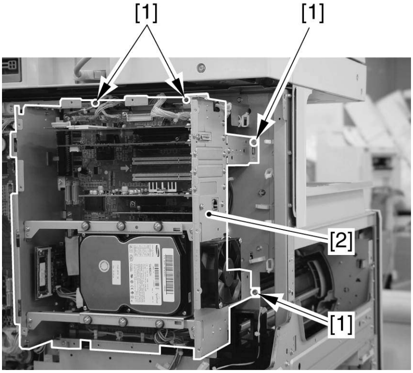


F-10-146

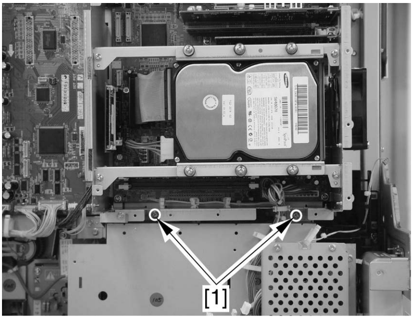


F-10-147

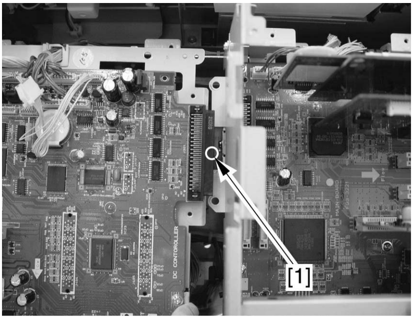
4) Remove the 7 screws, and detach the controller box [2].



F-10-148

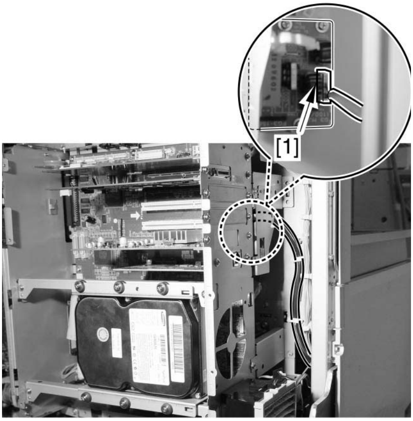


F-10-149



F-10-150

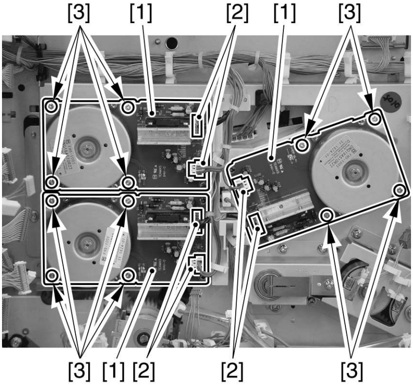
⚠If a fax unit is installed, you will find a connector [1] on the modular PCB found behind the controller box. Be sure to disconnect this connector before detaching the controller box from the machine.



F-10-151

10.5.19.4 Removing the Main Drive Motor

1) Remove each motor [1]. (2 connectors [2], 4 screws [3])



F-10-152

⚠The 3 motors on the main drive assembly may be positioned against the markings on the main drive frame. Each of these motors, moreover, may be identified by the color of its nameplate.

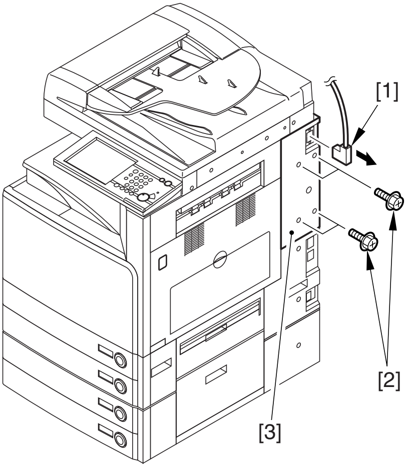
T-10-14

Motor	Marking	Nameplate color
Main motor (M2)	M	white
Drum motor (M9)	D	yellow
Fixing motor (M11)	L	pink

10.5.20 Right Door

10.5.20.1 Removing the Right Cover (upper rear)

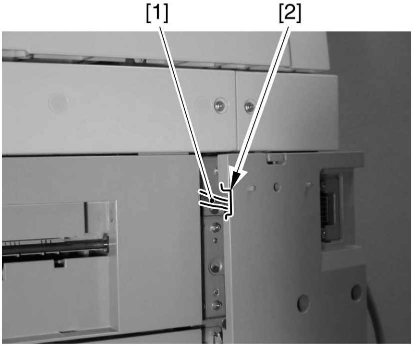
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-10-153

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

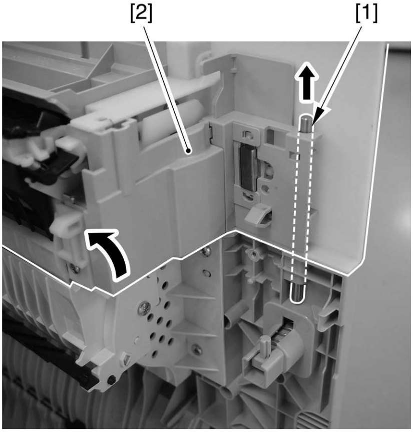
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-10-154

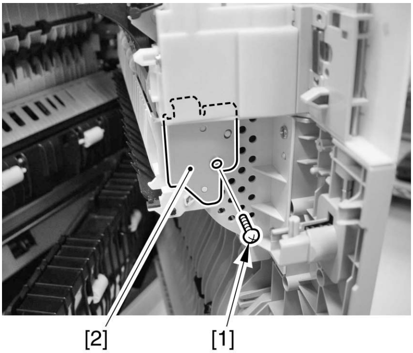
10.5.20.2 Removing the Right Door

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-10-155

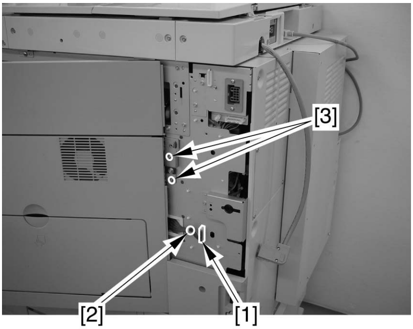
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-10-156

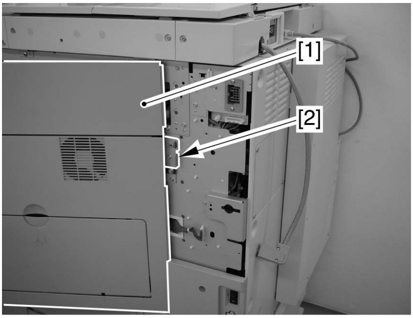
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-10-157

6) Detach the right door [1] together with the hinge [2].

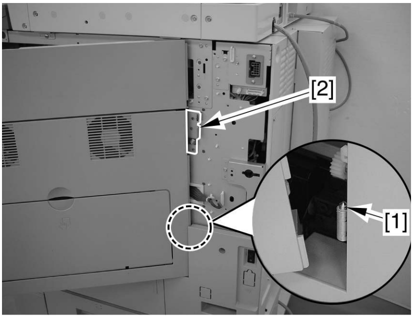


F-10-158

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



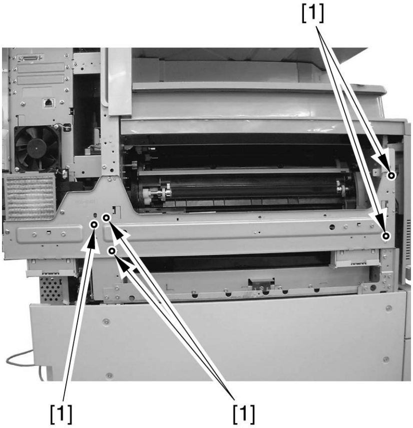
F-10-159

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

10.5.21 Cautions in Handling the Left Stay

10.5.21.1 Points to Note about Handling the Left Stay

⚠The left stay is used to keep the interval of the front and rear side plates at a specific distance.
If the distance is not correct, the output may show blurred images. The distance between the front and rear side plates cannot be adjusted in the field. Be sure not to loosen the 5 screws [1] used to keep the left stay in place. These screws are paint-locked.



F-10-160

Chapter 11 Maintenance and Inspection

Contents

11.1 Periodically Replaced Parts..11-1
  11.1.1 Overview 11-1
  11.1.2 Reader Unit 11-1
  11.1.3 Printer Unit...11-1
11.2 Durables and Consumables 11-2
  11.2.1 Overview 11-2
  11.2.2 Reader Unit 11-2
  11.2.3 Printer Unit...11-2
11.3 Scheduled Servicing Basic Procedure..11-6
  11.3.1 Scheduled Servicing Basic Procedure...11-6
  11.3.2 Items of Work for Scheduled Servicing (reader unit).....................11-8
  11.3.3 Items of Work for Scheduled Servicing (printer unit) 11-9
  11.3.4 Points to Note for Scheduled Servicing Work 11-19
11.4 Cleaning 11-21
  11.4.1 Cleaning the Primary Charging Roller..11-21

11.1 Periodically Replaced Parts

11.1.1 Overview

Some parts of the machine must be replaced on a periodical basis so as to ensure a specific level of performance. They may be free of external changes or damage, but they can significantly affect the machine performance once they lose their function.
It is best if replacement work is scheduled to coincide with a scheduled visit to the user's.

⚠

The values indicated herein are estimates only and are subject to change depending on the site environment and how the machine is used.

11.1.2 Reader Unit

The machine's reader unit does not have parts that must be replaced on a periodical basis.

11.1.3 Printer Unit

The machine's printer unit does not have parts that must be replaced on a periodical basis.

11.2 Durables and Consumables

11.2.1 Overview

Some parts of the machine may have to be replaced once or more over the period of machine warranty because of wear or damage. Replace them as needed by referring to the table of estimated lives (expressed in terms of the number of prints they make).

Making Checks When Replacing Durables
Use the following service mode items to find out when to replace parts:

- Machine
  - **COPIER>COUNTER>DRBL-1**
  - **COPIER>COUNTER>MISC(Bk developing unit only)**
- Accessory
  - **COPIER>COUNTER>DRBL-2**

11.2.2 Reader Unit

The machine's reader unit does not have parts that are classified as durables.

11.2.3 Printer Unit

T-11-1

as of January 2004

Ref.	**Parts name**	**Pats No.**	**Q'ty**	**Estimated life (prints)**	**Remarks**
[1]	Developing unit (Bk)	FM2-0056-000	1	500,000	
[2]	Developing unit (Y)	FM2-0057-000	1	50,000	
[3]	Developing unit (M)	FM2-0058-000	1	50,000	
[4]	Developing unit (C)	FM2-0059-000	1	50,000	
[5]	Intermediate transfer belt (ITB)	FC5-0334-000	1	300,000 images	*1
[6]	ITB cleaning blade	FC5-0368-000	1	100,000 images	*1
[7]	Primary transfer roller	FC5-6920-000	1	300,000 images	*1
[8]	Secondary transfer inside roller	FC5-0337-000	1	300,000 images	*1
[9]	Secondary transfer outside roller	FC5-0661-000	1	60,000	
[10]	Separation static eliminator	FC5-0664-000	1	240,000	
[11]	Fixing assembly 100 V	FM2-0172-000	1	200,000	*2
	Fixing assembly 115 V	FM2-0173-000	1	200,000	*2
	Fixing assembly 230 V	FM2-0174-000	1	200,000	*2
[12]	Fixing roller	FC5-0726-000	1	100,000	*3
[13]	Pressure roller	FC5-0727-000	1	100,000	*3
[14]	Fixing upper frame unit	FM2-0176-000	1	100,000	*3
[15]	Feed roller/separation roller	FC5-6934-000	4	120,000	
[16]	Manual feed pickup roller	FB1-8581-000	1	240,000	
[17]	Manual feed separation pad	FC5-0488-000	1	240,000	
[18]	Dust-blocking glass cleaning pad	FL2-0033-000	1	500,000	

as of January 2004

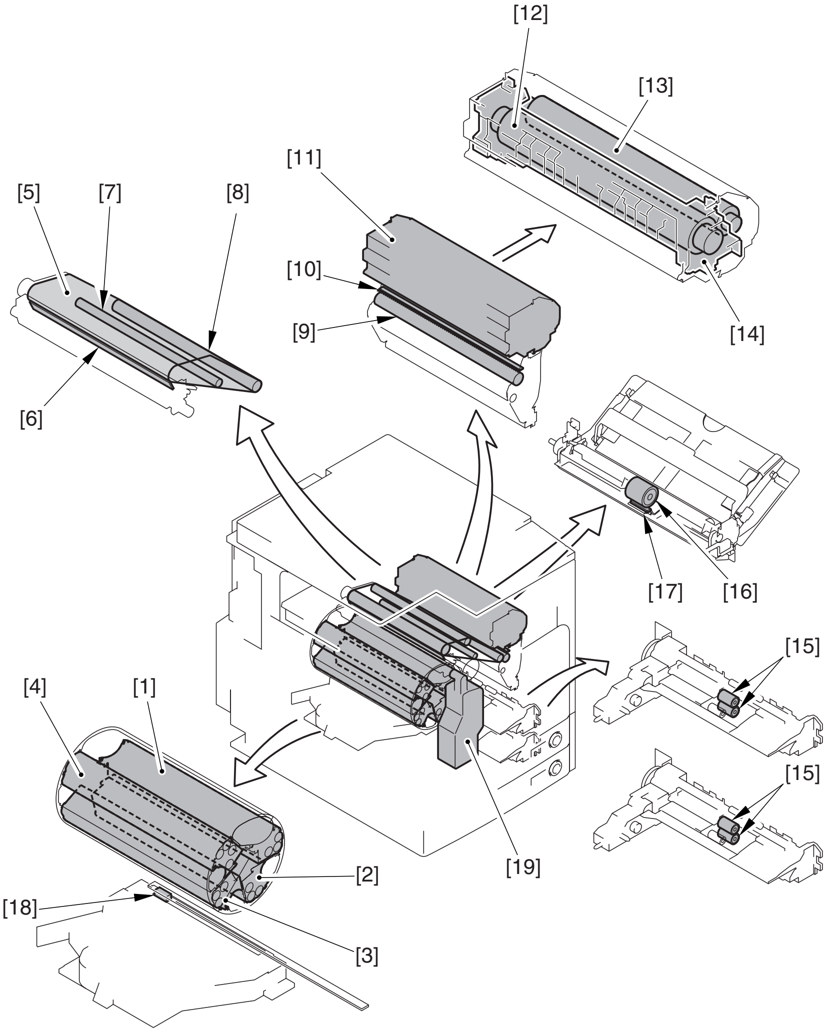
Ref.	**Parts name**	**Pats No.**	**Q'ty**	**Estimated life (prints)**	**Remarks**
[19]	ITB Waste Toner Unit	FM2-0083-000	1	60,000 images	*1

*1: The value here is an estimate expressed in terms of the number of mono color prints made. In the case of full-color prints, the value will be 1/4 of that indicated.

*2: Be sure to replace the fixing roller, pressure roller, and fixing upper frame unit when 100,000 prints are made.

*3: Be sure to replace the fixing roller, pressure roller, and fixing upper frame unit at a time; or to replace the fixing assembly every 100,000 prints.

⚠Expected service life shows the central value of a group of evaluation data points. Parts Numbers may subject to change because of design changes.


[12]
[13]
[11]
[5]
[7]
[8]
[10]
[9]
[14]
[6]
[17]
[16]
[15]
[4]
[1]
[15]
[2]
[19]
[18]
[3]

F-11-1

11.3 Scheduled Servicing Basic Procedure

11.3.1 Scheduled Servicing Basic Procedure

⚠

- As a rule, provide scheduled servicing every 60,000 prints.
- Before setting out for a visit, check with the service book, and take parts for which replacement is expected.
- Disconnect the power plug on a periodical basis, and clean it and the area around it with a dry cloth. If left connected for a long time in an area subject to high humidity or oily smoke, it can catch fire (the buildup of dust is likely to absorb moisture and cause insulation failure).

<Work Procedure>

1) Report to the person in charge, and check the general condition.

2) Record the counter readings, and check the faulty prints.

3) Make the following checks, and clean/adjust the components:

- COPIER > COUNTER > MISC > FX-UP-RL

- COPIER > COUNTER > MISC > DV-UNT-K

Any of the following indicates that the counter reading is incorrect:

a. the counter reading is lower than that recorded for the previous service visit.

b. the counter reading is excessively high in relation to the increase in the total counter reading recorded for the previous service visit.

⚠If the counter reading is faulty, make the following computation, and enter the result:

A = current reading of 'total 2'.

B = reading of 'total 2' recorded for the previous service visit.

C = reading of 'FX-UP-RL' or 'DV-UNIT-K' recorded for the previous service visit.

Enter the result of the following for 'FX-UP-RL' or 'DV-UNIT-K':
(A - B) + C

---

4) Check the following item, and clean/adjust the parts as necessary.

T-11-2

Item to check		
Test Copy	image density standards	
	soiling of white background	
	clarity of characters	
	margin	
	fixing	incorrect registration, soiling of back of paper
	margin standards (singe-sided print)	leading edge: 2.5 +/-1.5 mm
		left edge: 2.5 +/-1.5 mm
	(double-sided print)	leading edge: 2.5 +/- 2.0 mm
		left edge: 2.5 +/-2.0 mm
Laser Exposure System	dust-blocking glass cleaning tool	
Feeding System	registration upper/lower roller	
	paper lint in front of registration assembly	

5) Check the waste toner case.
If the case is half full, dispose of the waste toner in a plastic bag for collection. Or, replace it with a new one.

⚠

- If you have to dispose of waste toner, be sure that you follow the rules and regulations imposed by the local authorities.

- Do not throw waste toner into fire. (It can explode, creating significant hazards.)

6) Clean the copyboard glass and the reading glass.
7) Make test copies.
8) Make sample copies.
9) Check the operation of the leakage breaker.

While the machine remains on, press the test switch of the leakage breaker to see if it operates normally (i.e., the lever shits to the OFF side to cut off the power).

- If the leakage breaker fails to operate normally, replace it, and make the foregoing check once again.

[Resetting]

After making the check, turn off the power switch; then, shift the lever back to the ON position, and turn on the power.

10) Put the sample copies in order, and clean up the area around the machine.
11) Record the final counter readings. At this time, be sure also to record the readings of 'FX-UP-RL' and 'DV-UNIT-K'.
12) Fill out the service book and report to the person in charge.
   Be sure to record the result of the check on the leakage breaker in the service book.

11.3.2 Items of Work for Scheduled Servicing (reader unit)

The machine's reader unit does not have items that must be serviced on a scheduled basis.

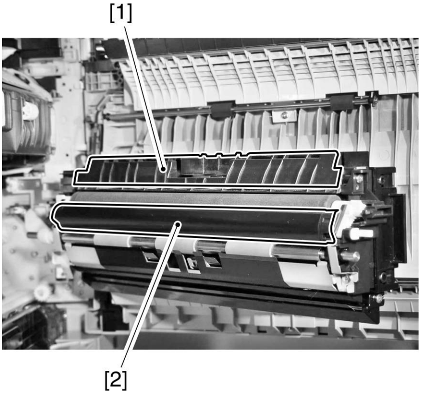
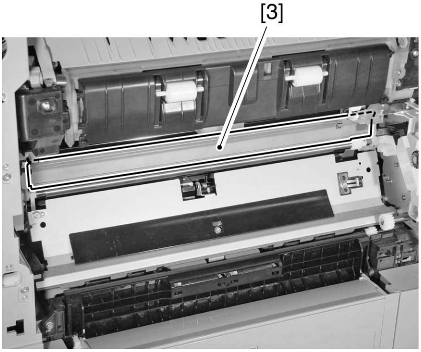
⚠

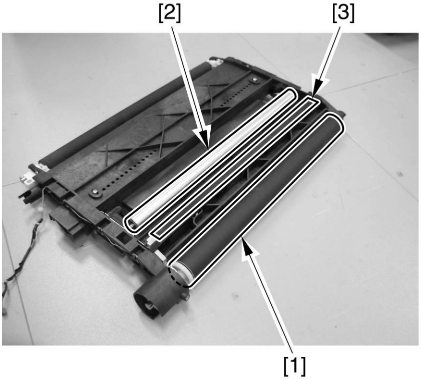
Be sure to clean the copyboard glass and the ADF reading glass during each visit you make for scheduled servicing.

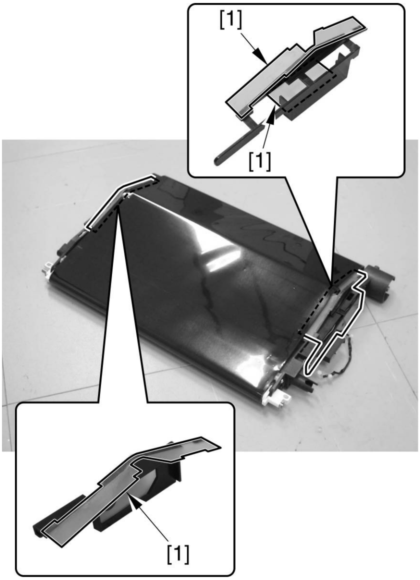
11.3.3 Items of Work for Scheduled Servicing (printer unit)

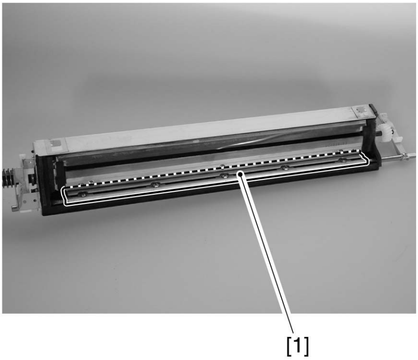
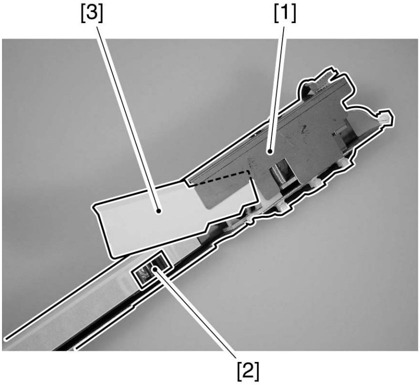
⚠Do not use solvents or oils other than those indicated.

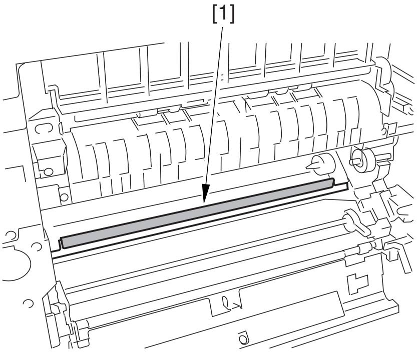
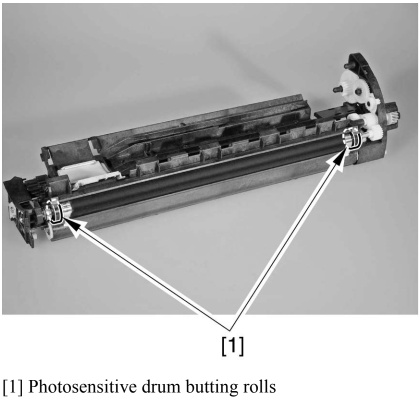
T-11-3

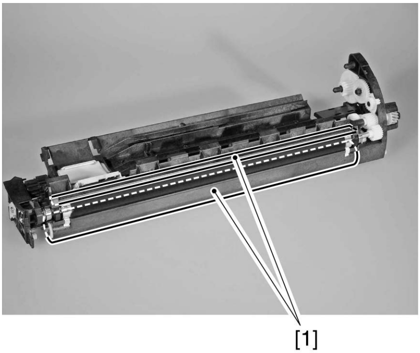
Unit	Location	Item of work	Inter-vals	Remarks
Transfer assembly	Transfer/feed guide	clean	At the time of drum unit replacement	  [1] Feed guide [2] Secondary transfer front outside guide [3] Secondary transfer front inside guide
Transfer assembly	patch image read sensor	clean	At the time of drum unit replacement	

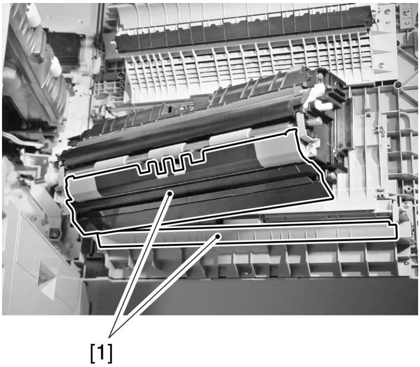
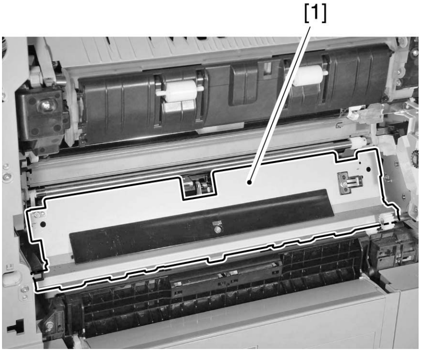
Unit	**Location**	**Item of work**	**Inter-vals**	**Remarks**
Transfer assembly	Drive roller/ Tension roller/ Inside brade	clean	300,000 images	 [1] Drive roller [2] Tension roller [3] Inside blade

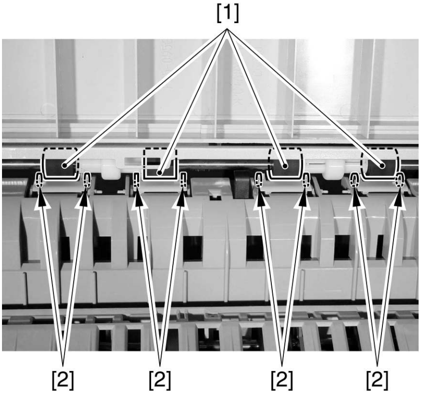
Unit	**Location**	**Item of work**	**Inter-vals**	**Remarks**
Transfer assembly	Mylar sheet	clean	300,000 images	 [1] Mylar sheet

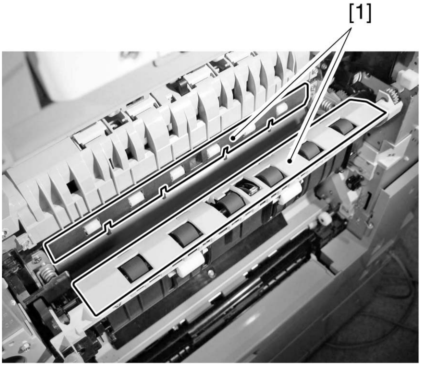
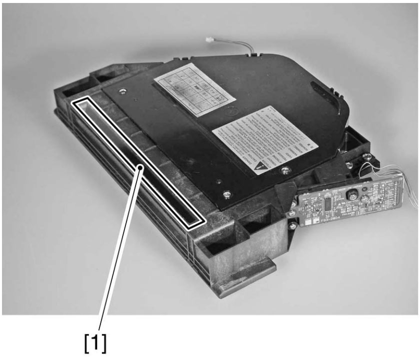
Unit	Location	Item of work	Inter-vals	Remarks
Transfer assembly	ITB cleaning blade fixing base	clean	At the time of drum unit replacement	 [1] ITB cleaning blade fixing base
Transfer assembly	ATR sensor window/shutter	clean	At the time of drum unit replacement	 [1] ATR sensor unit [2] ATR sensor window [3] Shutter
Transfer assembly	rotary upper cover	clean	At the time of drum unit replacement	If there is no stained image at the time of drum unit replacement, clean it at the time of 300,000 images. For instructions on how to remove the rotary upper cover, see "Disassembly and Assembly" under "Image Formation System."

Unit	**Location**	**Item of work**	**Inter-vals**	**Remarks**
Transfer assembly	ITB/HP sensor	clean	300,000 images	
Transfer assembly	ITB releasing part	clean	300,000 images	 [1]ITB releasing part Before cleaning the part, remove the ITB unit and the drum unit from the machine.
Developing assembly	Photosensitive drum butting roll	clean	120,000 images	 [1] Photosensitive drum butting rolls Perform the work only for the Bk developing unit. The color units need not be cleaned (as they are replaced after 50,000 images).

Unit	Location	Item of work	Inter-vals	Remarks
Developing assembly	Developing assembly casing	clean	120,000 images	 [1] Developing assembly casing Perform the work only for the Bk developing unit. The color developing units need not be cleaned (as they are replaced after 50,000 images).
Developing assembly	Rotary lower cover	clean	120,000 images	For instructions on how to remove the rotary lower cover, see "Disassembly and Assembly" under "Image Formation System."
Feeding assembly	Registration roller	clean	At the time of drum unit replacement	

Unit	Location	Item of work	Inter-vals	Remarks
Feeding assembly	Registration front guide	clean	At the time of drum unit replacement	  [1] Registration front guide
Feeding assembly	Transparency sensor surface	clean	240,000 images	

Unit	Location	Item of work	Inter-vals	Remarks
Feeding assembly	Feeding roller, scraping ring	clean	as needed	 [1] Delivery rollers [2] Scrape rings Clean the part only when dirt is conspicuous. You need not clean the parts if a Finisher-P1 is installed.
Feeding assembly	Duplex feed roller 1/2	clean	as needed	Clean the part only when dirt is conspicuous.
Fixing assembly	Fixing outlet roller, roll	clean	as needed	Clean the part only when dirt is conspicuous.

Unit	**Location**	**Item of work**	**Inter-vals**	**Remarks**
Fixing assembly	Fixing delivery guide assembly	clean	as needed	 [1] Fixing delivery guide Clean the part if adhesion is found.
Others	Dust-blocking glass	clean	At the time of drum unit replacement	 [1] Dust-blocking guide

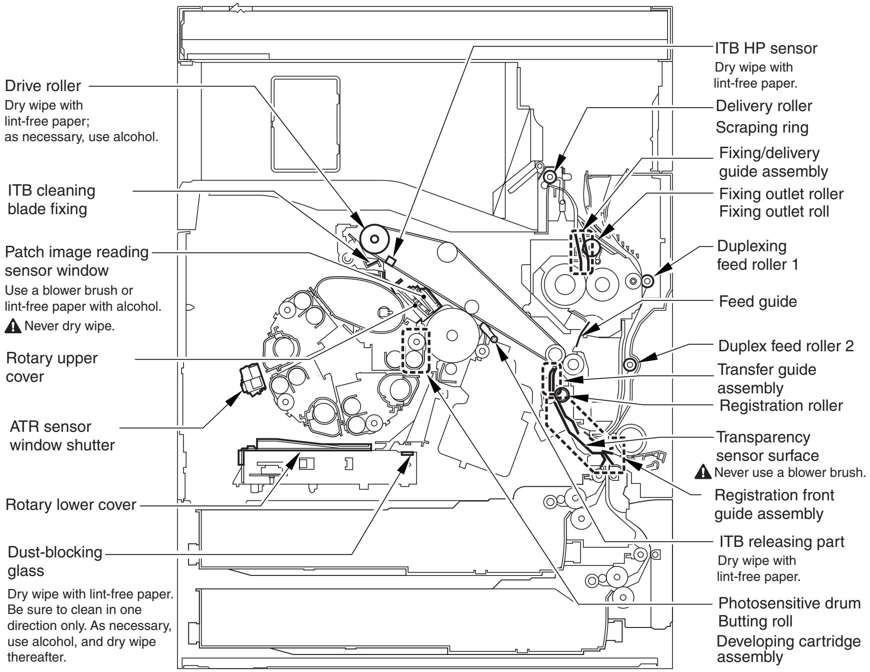
---

⚠The above values are estimates only, and are subject to change according to future data.

11.3.4 Points to Note for Scheduled Servicing Work

⚠

- If you used solvent, be sure to check that the part has completely dried before fitting it back to the machine.
- Do not use a wet (moist) cloth in areas not specifically indicated.
- Be sure to conduct scheduled servicing at the indicated intervals.


Drive roller
Dry wipe with lint-free paper; as necessary, use alcohol.
ITB cleaning blade fixing
Patch image reading sensor window
Use a blower brush or lint-free paper with alcohol.
⚠ Never dry wipe.
Rotary upper cover
ATR sensor window shutter
Rotary lower cover
Dust-blocking glass
Dry wipe with lint-free paper. Be sure to clean in one direction only. As necessary, use alcohol, and dry wipe thereafter.
ITB HP sensor
Dry wipe with lint-free paper.
Delivery roller
Scraping ring
Fixing/delivery guide assembly
Fixing outlet roller
Fixing outlet roll
Duplexing feed roller 1
Feed guide
Duplex feed roller 2
Transfer guide assembly
Registration roller
Transparency sensor surface
⚠ Never use a blower brush.
Registration front guide assembly
ITB releasing part
Dry wipe with lint-free paper.
Photosensitive drum
Butting roll
Developing cartridge assembly

Note: Unless otherwise specified, use lint-free paper with alcohol.

F-11-2

11.4 Cleaning

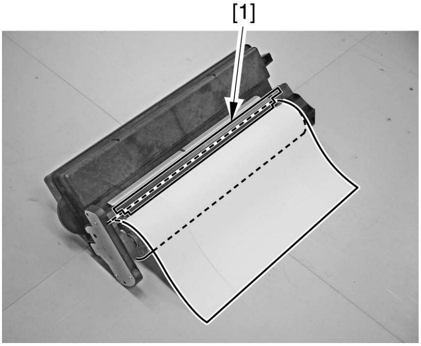
11.4.1 Cleaning the Primary Charging Roller

⚠ Cleaning the primary charging roller involves rotating the drum manually. Be sure of the following during the work:

- **Do not touch the imaging area of the drum surface. The presence of finger prints or oils can cause cracking of the surface. Whenever possible, try washing the hands before starting the work.**
- **Be sure to rotate the drum in the correct direction. Go over the following, and make sure not to rotate it in the wrong direction.**

⚠ Be sure to use paper under the drum unit to prevent adhesion of dust.

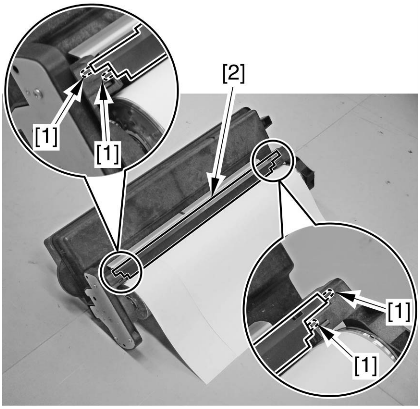
1) Insert paper through the gap under the primary charging roller cover [1], all the way until it stops.



F-11-3

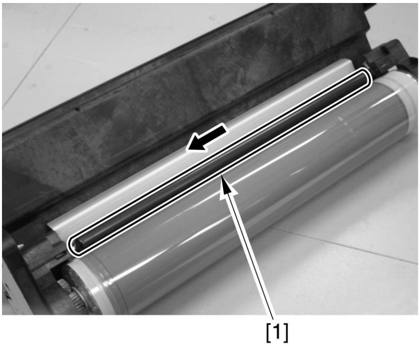
⚠ Be sure to perform step 1) without fail to protect the drum from scratches and external light.

2) Free the 4 protrusions [1], and detach the primary charging roller cover [2].



F-11-4

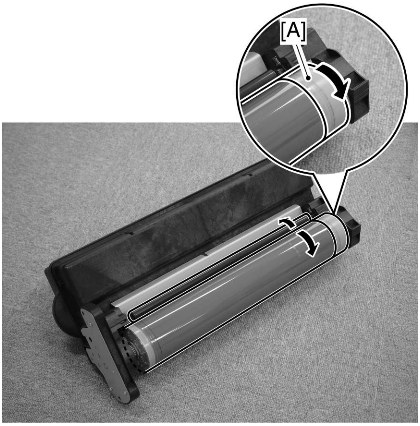
3) Dry wipe the primary charging roller [1] with lint-free paper. Be sure to move the paper in axial direction and in one direction.



F-11-5

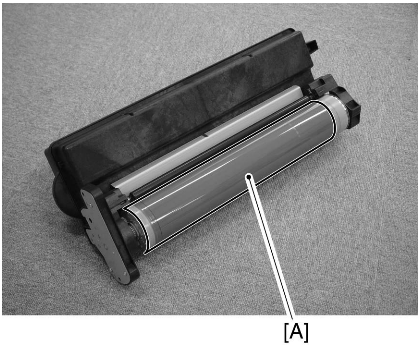
4) Hold the end of the drum [A] (i.e., non-imaging area, shown in beige); then, turn the drum in the direction of the arrow (clockwise direction when viewing the drum unit from the

front). This will rotate the primary charging roller.



F-11-6

⚠ **Do not touch the imaging area [A] (shown in moss green) of the drum surface. The presence of fingerprints or oils will cause cracking of the drum surface.**



F-11-7

⚠ **Be sure to pay attention to the direction of drum rotation. Do NOT rotate it**

counterclockwise when viewing the drum unit from the front. If you inadvertently started to turn it in the wrong direction, stop immediately; then, put the drum unit back into the machine, generate a halftone image, and check to see that the output is free of image faults.

---

5) Repeat steps 3) and 4) to clean the entire surface of the primary charging roller.

⚠ If subjected to light for a long time, the drum will deteriorate. Be sure to work briskly (e.g., within 5 min or less).

⚠ When removing the primary charging roller cover, be sure also to keep paper between the primary charging roller and the drum as you did when removing the cover. Remove the paper after you have attached the cover.

Chapter 12 Standards and Adjustments

Contents

12.1 Image Adjustments....................12-1

- 12.1.1 Standards for Image Position....................12-1
- 12.1.2 Checking the Image Position....................12-1
- 12.1.3 Cassette....................12-3
- 12.1.4 Manual Feed Tray....................12-6
- 12.1.5 Side Paper Deck....................12-7

12.2 Scanning System....................12-10

- 12.2.1 After Replacing the CIS....................12-10
- 12.2.2 After Replacing the Copyboard Glass....................12-10
- 12.2.3 After Replacing the ADF Reading Glass....................12-11
- 12.2.4 After Replacing the Reader Controller PCB or After Initializing the RAM....................12-12

12.3 Laser Exposure System....................12-15

- 12.3.1 After Replacing the Laser Scanner Unit....................12-15

12.4 Image Formation System....................12-16

- 12.4.1 After Replacing the Intermediate Transfer Unit....................12-16
- 12.4.2 After Replacing the Intermediate Transfer Belt....................12-16
- 12.4.3 After Replacing the Primary Transfer Roller....................12-16
- 12.4.4 After Replacing the Drum Unit....................12-16
- 12.4.5 After Replacing the Developing Unit (Y, M, C)....................12-17
- 12.4.6 After Replacing the Developing Unit (Bk)....................12-17
- 12.4.7 After Replacing the Secondary Transfer Outside Roller....................12-18

12.5 Fixing System....................12-19

- 12.5.1 After Disassembling the Fixing Unit....................12-19
- 12.5.2 After Replacing the Fixing Unit....................12-19
- 12.5.3 After Replacing the Fixing Roller....................12-19
- 12.5.4 Nip Adjustment....................12-19
- 12.5.5 Point to Note About the Position of the Fixing Main Thermistor.12-21
- 12.5.6 Point to Note When Mounting the Fixing Sub Thermistor....................12-21
- 12.5.7 Point to Note When Mounting the Fixing Thermal Switch....................12-22

12.6 Electrical Components....................12-24

- 12.6.1 After Replacing the Reader Controller PCB....................12-24

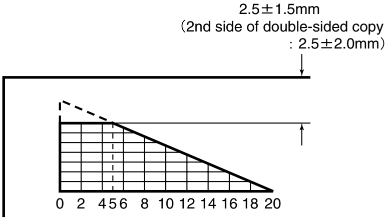
12.6.2 After Replacing the DC Controller PCB 12-26
12.6.3 After Replacing the Main Controller PCB (main)........................ 12-28
12.6.4 After Replacing the SRAM Board.. 12-28
12.6.5 After Replacing the HDD 12-29
12.6.6 When Replacing the HVT PCB 12-30
12.7 Pickup/Feeding System... 12-32
12.7.1 Adjusting the Horizontal Registration When Replacing the Pickup Cassette 12-32
12.7.2 Adjusting the Horizontal Registration When Replacing the Duplex Unit 12-34
12.7.3 Adjust the Horizontal Registration for the Manual Feed Tray 12-35
12.7.4 Registering the Paper Width Basic Value.................................... 12-36

12.1 Image Adjustments

12.1.1 Standards for Image Position

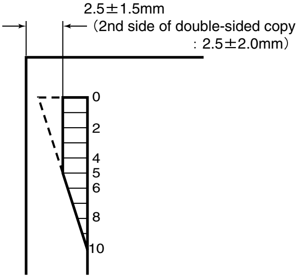
A print made at a magnification of 100% must meet the following standards for image margin/non-image width:

- Margin Along the Leading Edge


2.5±1.5mm
(2nd side of double-sided copy
: 2.5±2.0mm)
0 2 4 5 6 8 10 12 14 16 18 20

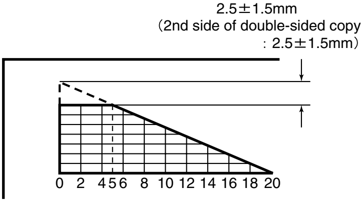
F-12-1

- Left/Right Image Margin


2.5±1.5mm
(2nd side of double-sided copy
: 2.5±2.0mm)
0
2
4
5
6
8
10

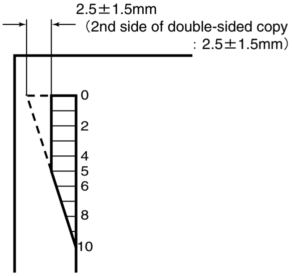
F-12-2

- Leading Edge Non-Image Width


2.5±1.5mm
(2nd side of double-sided copy
: 2.5±1.5mm)
0 2 4 5 6 8 10 12 14 16 18 20

F-12-3

- Left/Right Non-Image Width


2.5±1.5mm
(2nd side of double-sided copy
: 2.5±1.5mm)
0
2
4
5
6
8
10

F-12-4

12.1.2 Checking the Image Position

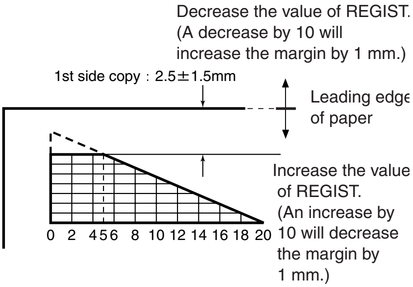
Make 10 prints each using the following sources of paper; then, check to make sure that the image margin and the non-image width are as indicated;
[1] individual cassettes
[2] manual feed tray
[3] side paper deck

If not as indicated, make the following adjustments:

1. Leading edge image margin (1st side)

Use the following service mode item to adjust the registration:

COPIER> ADJUST> FEED-ADJ> REGIST


Decrease the value of REGIST.
(A decrease by 10 will increase the margin by 1 mm.)
1st side copy : 2.5±1.5mm
Leading edge of paper
Increase the value of REGIST.
(An increase by 10 will decrease the margin by 1 mm.)
0 2 4 5 6 8 10 12 14 16 18 20

F-12-5

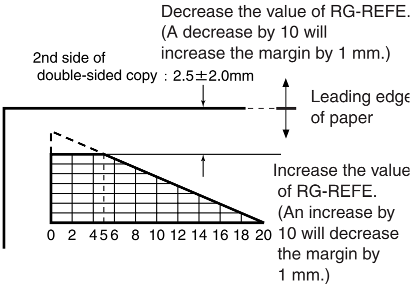
2. Left/right image margin (1st side)

Use it to adjust the horizontal registration mechanically.

3. Leading edge image margin (2nd side)

Use the following service mode item to adjust the registration:

COPIER> ADJUST> FEED-ADJ> RG-REFE


Decrease the value of RG-REFE.
(A decrease by 10 will increase the margin by 1 mm.)
2nd side of double-sided copy : 2.5±2.0mm
Leading edge of paper
Increase the value of RG-REFE.
(An increase by 10 will decrease the margin by 1 mm.)
0 2 4 5 6 8 10 12 14 16 18 20

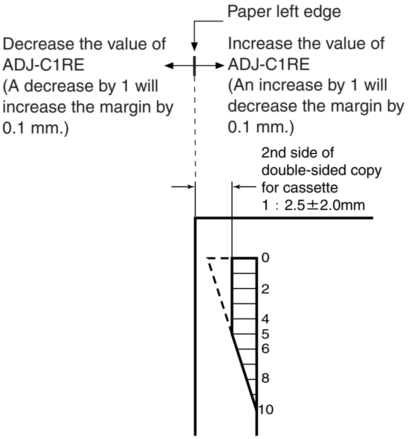
F-12-6

4. Left/right image margin (2nd side)

Use the following service mode item to adjust the horizontal registration:

- Cassette 1

COPIER> ADJUST> FEED-ADJ> ADJ-C1RE

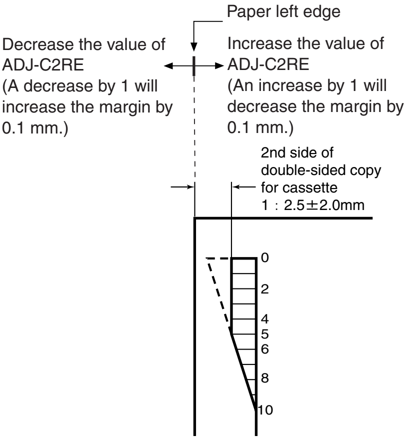

Paper left edge
Decrease the value of ADJ-C1RE
(A decrease by 1 will increase the margin by 0.1 mm.)
Increase the value of ADJ-C1RE
(An increase by 1 will decrease the margin by 0.1 mm.)
2nd side of double-sided copy for cassette 1 : 2.5±2.0mm
0
2
4
5
6
8
10

F-12-7

- Cassette 2

COPIER> ADJUST> FEED-ADJ> ADJ-

C2RE

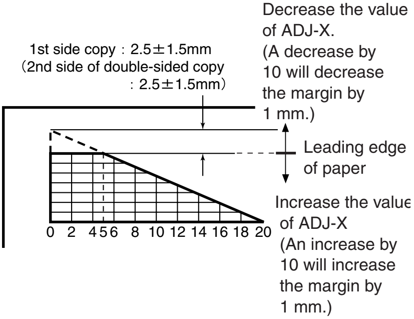

Paper left edge
Decrease the value of ADJ-C2RE
(A decrease by 1 will increase the margin by 0.1 mm.)
Increase the value of ADJ-C2RE
(An increase by 1 will decrease the margin by 0.1 mm.)
2nd side of double-sided copy for cassette 1 : 2.5±2.0mm
0
2
4
5
6
8
10

F-12-8

5. Leading edge non-image width

Use the following service mode item to make adjustments:

COPIER> ADJUST> ADJ-XY> ADJ-X

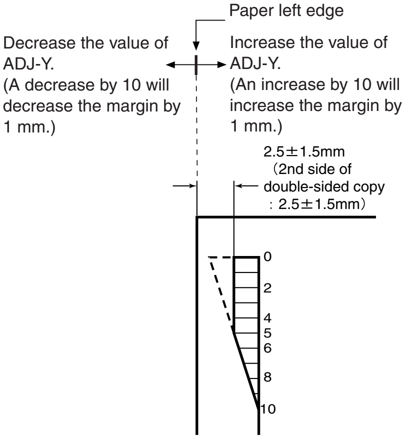

1st side copy : 2.5±1.5mm
(2nd side of double-sided copy : 2.5±1.5mm)
Decrease the value of ADJ-X.
(A decrease by 10 will decrease the margin by 1 mm.)
Leading edge of paper
Increase the value of ADJ-X
(An increase by 10 will increase the margin by 1 mm.)
0 2 4 5 6 8 10 12 14 16 18 20

F-12-9

6. Left/right non-image width

Use the following service mode item to make adjustments:

COPIER> ADJUST> ADJ-XY> ADJ-Y

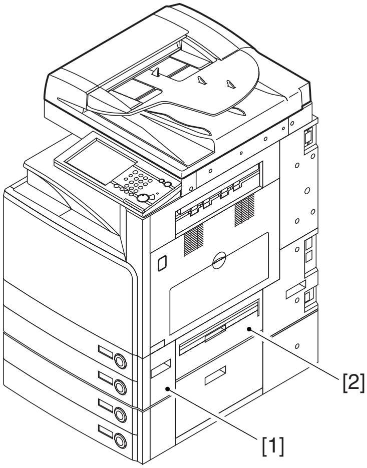

Paper left edge
Decrease the value of ADJ-Y.
(A decrease by 10 will decrease the margin by 1 mm.)
Increase the value of ADJ-Y.
(An increase by 10 will increase the margin by 1 mm.)
2.5±1.5mm
(2nd side of double-sided copy : 2.5±1.5mm)
0
2
4
5
6
8
10

F-12-10

12.1.3 Cassette

A. Left/Right Image Margin Adjustment (1st side)

1) Open the lower right cover [2]; then, remove the 2 screws, and detach the cover (lower front) [1].



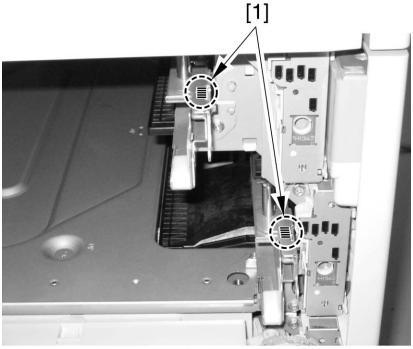
F-12-11

2) Slide out the cassette 1 or 2.

(In the case of a 2-cassette pedestal, slide out the cassette 3 or 4.)

3) Check the index [1].

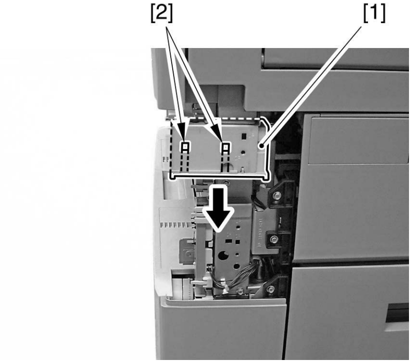
(Perform this step also for a 2-cassette pedestal.)



F-12-12

A-1. Making Adjustments of the Cassette 1 (left/right image margin; 1st side)

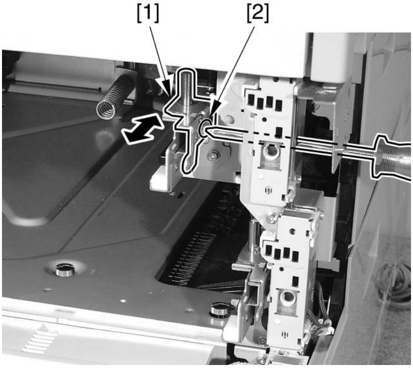
4) Free the 2 claws [2], and detach the grip (right front) [1].



F-12-13

5) Loosen the fixing screw [2] of the horizontal registration adjusting plate [1] of the cassette.

6) In keeping with the index you checked in step 3), move the horizontal registration adjusting plate back and forth. Moving the adjusting plate toward the rear of the machine will increase the left/right image margin on the front of the image.



F-12-14

7) Tighten the fixing screw.

8) Fit the cassette 1.

9) Make copies using the cassette 1 as the source of paper, and check to make sure that the margin is as indicated.

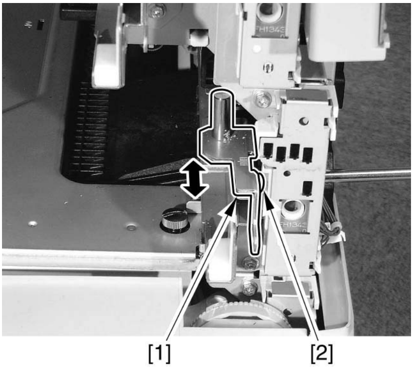
10) Fit back the grip (right front).

11) Fit back the machine's right front cover.

A-2. Making Adjustments for the Cassette 2 (left/right image margin; 1st side)

4) Loosen the fixing screw [2] of the horizontal registration adjusting plate [1] of the cassette.

5) In keeping with the index you checked in step 3), move the horizontal registration adjusting plate back and forth. Moving the adjusting plate toward the rear of the machine will increase the left/right image margin on the front of the image.



F-12-15

6) Tighten the fixing screw.

7) Fit back the cassette 2.

8) Make copies using the cassette 2 as the source of paper, and check to make sure that the margin is as indicated.

9) Fit back the machine's right front cover.

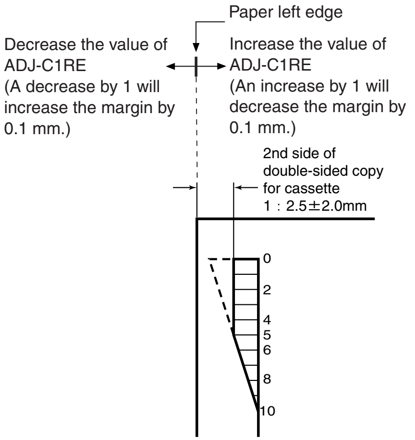
B. Left/Right Image Margin (2nd side)

B-1. Making Adjustments for Cassette 1 (left/right image margin; 2nd side)

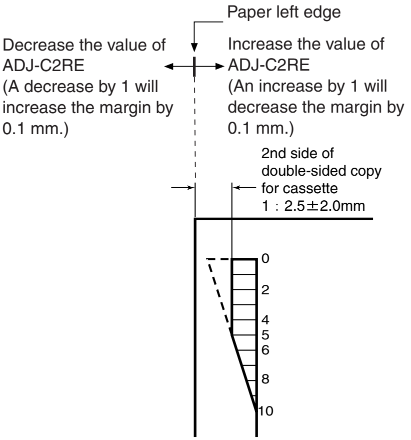
1) If the margin is not as indicated, change the adjustment value for the left/right margin of the 2nd side.

COPIER>ADJUST>FEED-ADJ>ADJ-C1RE

An increase by 1 will decrease the left/right margin on the front by 0.1 mm.


Paper left edge
Decrease the value of ADJ-C1RE (A decrease by 1 will increase the margin by 0.1 mm.)
Increase the value of ADJ-C1RE (An increase by 1 will decrease the margin by 0.1 mm.)
2nd side of double-sided copy for cassette 1 : 2.5±2.0mm
0
2
4
5
6
8
10

F-12-16


Paper left edge
Decrease the value of ADJ-C2RE (A decrease by 1 will increase the margin by 0.1 mm.)
Increase the value of ADJ-C2RE (An increase by 1 will decrease the margin by 0.1 mm.)
2nd side of double-sided copy for cassette 1 : 2.5±2.0mm
0
2
4
5
6
8
10

F-12-17

B-2. Making Adjustments for Cassette 2 (left/right image margin; 2nd side)

1) Enter the same value as for ADJ-C1RE using the following service mode item:
   COPIER>ADJUST>FEED-ADJ>ADJ-C2RE
2) Make double-sided copies from the cassette 2, and check to make sure that the margin is as indicated.
3) If not as indicated, change the adjustment value of the left/right margin on the 2nd side for the cassette 2.

COPIER>ADJUST>FEED-ADJ>ADJ-C2RE

An increase by 1 will decrease the left/right margin on the front by 0.1 mm.

4) Record the new adjustment values on the service label.
   - ADJ-C1RE
   - ADJ-C2RE
5) Press the Reset key twice to end service mode.

12.1.4 Manual Feed Tray

A. Left/Right Margin Adjustment (1st side; mechanical adjustment)

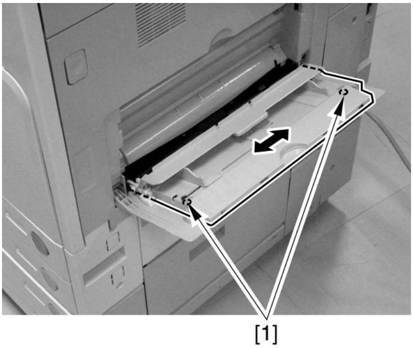
1) Place paper in the manual feed tray.
2) Make copies using the manual feed tray, and check to make sure that the left/right margin is 2.5 +/-1.5 mm.

- If not as indicated, perform the following:

3) Remove the paper from the manual feed

tray.

4) Loosen the manual feed tray upper cover fixing screw [1].



F-12-18

5) So that the margin is as indicated, move the manual feed tray upper cover back and froth.

Moving the manual feed tray upper cover toward the rear of the machine will decrease the left/right margin on the front side.

6) Tighten the manual feed tray upper cover fixing screw.

7) Place paper in the manual feed tray.

8) Make copies using the manual feed tray as the source of paper, and check to make sure that the margin is as indicated.

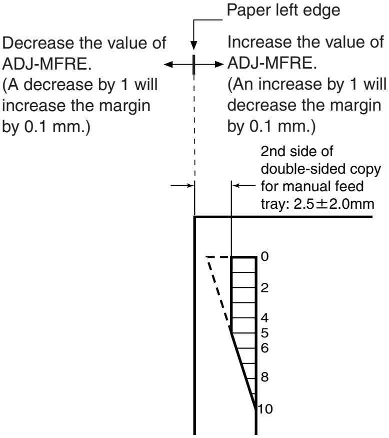
B. Left/Right Margin Adjustment (2nd side)

1) Make double-sided copies using the manual feed tray as the source of paper, and check to make sure that the left/right margin on the 2nd side is 2.5 ±2.0 mm.

2) If not as indicated, change the adjustment value of the left/right margin on the 2nd side for the manual feed tray.

COPIER > ADJUST > FEED-ADJ > ADJ-MFRE

An increase by 1 will decrease the left/ right image margin by 0.1 mm on the front side.


Paper left edge
Decrease the value of ADJ-MFRE.
(A decrease by 1 will increase the margin by 0.1 mm.)
Increase the value of ADJ-MFRE.
(An increase by 1 will decrease the margin by 0.1 mm.)
2nd side of double-sided copy for manual feed tray: 2.5±2.0mm
0
2
4
5
6
8
10

F-12-19

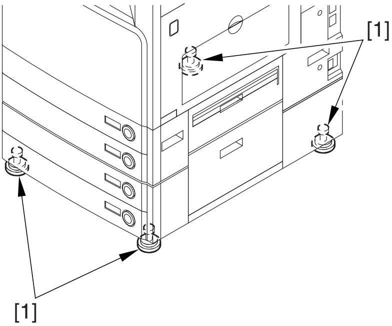
3) Record the new adjustment values on the service label.

- ADJ-MFRE

4) Press the Reset key twice to end service mode.

12.1.5 Side Paper Deck

1) Check to make sure that the 4 adjusters [1] of the pedestal are in firm contact with the floor.



F-12-20

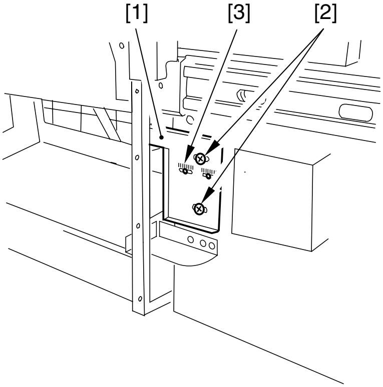
2) Connect the machine's power plug, and turn on the power.
3) When the machine has completed its wait period, make copies using the paper deck as the source of paper; then, make checks.

A. Left/Right Margin Adjustment (1st side; mechanical adjustment)

1) Make copies using the paper deck as the source of paper, and check to make sure that the left-right margin is 2.5 -1.5, +1.5 mm.

- If not as indicated, perform the following:
2) Slide out the compartment.
3) Turn the 2 screws [2] to adjust the position of the latch plate [1] of the deck open solenoid (SL2D).

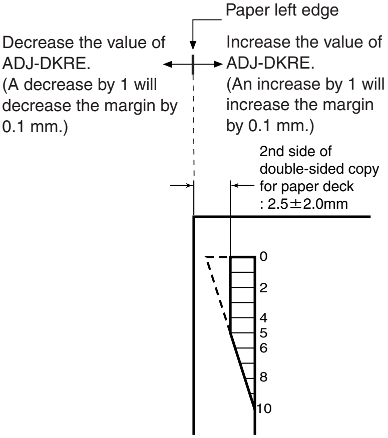
⚠At this time, use the index [3] on the latch plate as a reference.



F-12-21

B. Left/Right Margin Adjustment (2nd side)

1) Start service mode, and check the left/right margin for the cassette 1:
COPIER>ADJUST>FEED-ADJ>ADJ-CIRE
2) Enter the adjustment value of the left/right margin on the 2nd side for the cassette 1 as the left/right margin on the 2nd side of the side deck.
COPIER>ADJUST>FEED-ADJ>ADJ-DKRE
An increase by 1 will increase the left/right image on the front by 0.1 mm.


Paper left edge
Decrease the value of ADJ-DKRE.
(A decrease by 1 will decrease the margin by 0.1 mm.)
Increase the value of ADJ-DKRE.
(An increase by 1 will increase the margin by 0.1 mm.)
2nd side of double-sided copy for paper deck : 2.5±2.0mm
0
2
4
5
6
8
10

F-12-22

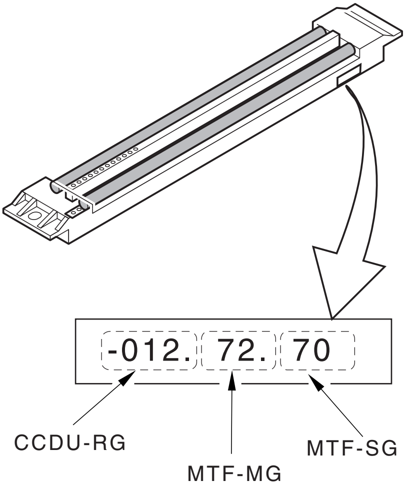
3) Press the Reset key twice to end service mode.

12.2 Scanning System

12.2.1 After Replacing the CIS

Be sure to enter the values indicated on the CIS label attached to the contact image sensor (CIS) using the following service mode items:

COPIER>ADJUST>CCD>CCDU-RG
(offset value against color displacement caused by CIS)
COPIER>ADJUST>CCD>MTF-MG
(MTF correction value for main scanning direction)
COPIER>ADJUST>CCD>MTF-SG
(MTF correction value for sub scanning direction)



F-12-23

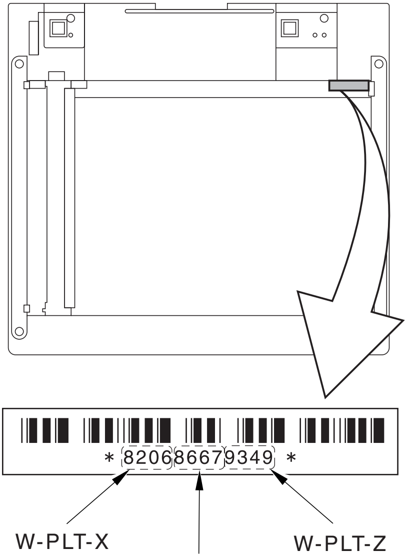
Also, be sure to update the values indicated on the service label attached behind the reader left cover by the values indicated on the CIS label.

Reference:
The machine is not shipped out of the factory with the CIS label attached to it.

12.2.2 After Replacing the Copyboard Glass

A. Enter the value indicated by the bar code found at the upper right on the copyboard glass (copyboard cover) using the following service mode items:

COPIER>ADJUST>CCD>W-PLT-X
COPIER>ADJUST>CCD>W-PLT-Y
COPIER>ADJUST>CCD>W-PLT-Z
(standard white plate white level data X, Y, Z)

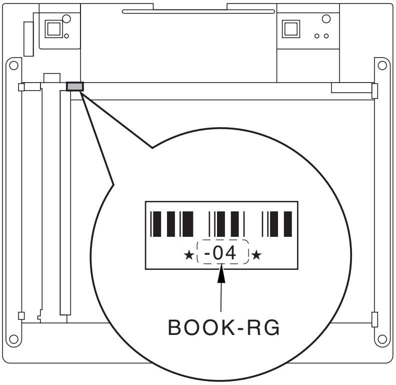


F-12-24

B. Enter the value indicated by the bar code found at the upper left of the copyboard glass (copyboard sheet) using the following service mode item:

COPIER>ADJUST>CCD>BOOK-RG

(offset value against color displacement caused by copyboard glass)



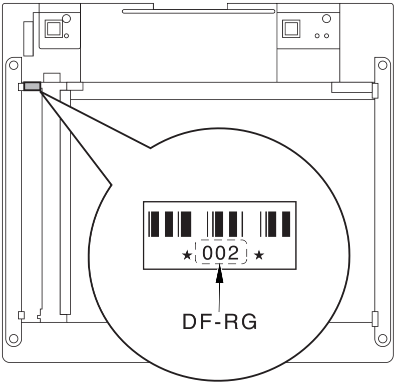
F-12-25

12.2.3 After Replacing the ADF Reading Glass

Enter the value indicated by the bar code found on the ADF reading glass using the following service mode item:

COPIER>ADJUST>CCD>DF-RG

(offset value against color displacement caused by stream reading glass)



F-12-26

12.2.4 After Replacing the Reader Controller PCB or After Initializing the RAM

⚠

- Before replacing the reader controller PCB, be sure to generate the latest P-PRINT printout.

<if you are initializing the RAM of the reader controller without replacing the PCB>

- Using the SST, upload the reader controller backup data; after initializing the RAM, download the data, thus eliminating the need for the following adjustment.

1. Reader Unit-Related Adjustment

1) Using the SST, download the latest system software (R-CON).
2) Make the following selections in service mode: COPIER>FUNCTION>CLEAR>R-CON; then, press the OK key to initialize the RAM. Thereafter, turn off and then on the main power.
3) Enter the appropriate values using the following service mode items:

a. standard white plate white level data

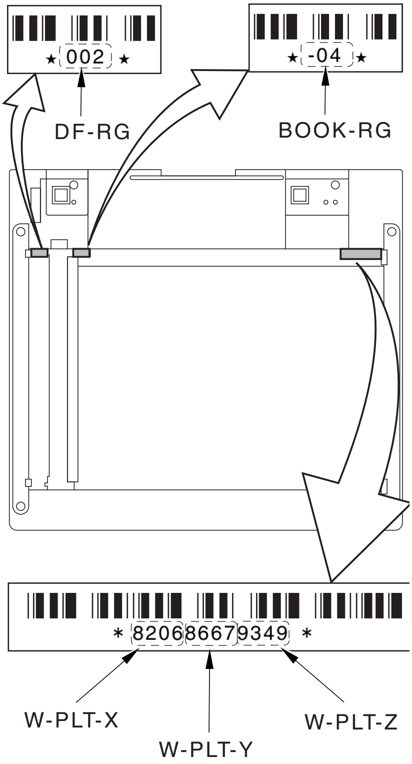
COPIER>ADJUST>CCD>W-PLT-X,Y,Z

b. offset value against color displacement for copyboard glass (copyboard cover)

COPIER>ADJUST>CCD>BOOK-RG

c. offset value against color displacement for copyboard glass (ADF)

COPIER>ADJUST>CCD>DF-RG



F-12-27

d. service label (behind reader unit left cover) values

d-1. CIS read position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-X

d-2. main scanning direction position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-Y

d-3. shading position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-S

d-4. sub scanning direction color displacement correction

COPIER>ADJUST>CCD>CCDU-RG

d-5. main/sub scanning direction MTF value

COPIER>ADJUST>CCD>MTF-MG,SG

d-6. auto gradation correction target value

COPIER>ADJUST>PASCAL>OFST-P-Y,M,C,K

⚠If the value of the following was not 0 before the replacement of the reader controller PCB: COPIER>OPTION>BODY>CCD-LUT.

Set a value other than '0' once again, and make the following adjustments using the D-10 Chart.

COPIER>FUNCTION>CCD>LUT-ADJ2

2. ADF-Related Adjustment

⚠The machine keeps ADF-related service mode data in the RAM of the reader controller; as such, you will have to make the appropriate adjustments if

you have replaced the reader controller or initialized the RAM.

1) Enter the values indicated in the P-PRINT printout you have previously generated for the following:

a. main scanning direction position adjustment (stream reading)

COPIER>ADJSUT>ADJ-XY>ADJ-Y-DF

b. original stop position adjustment

FEEDER>ADJSUT>DOCST

c. original feed speed (magnification) adjustment

FEEDER>ADUST>LA-SPEED

2) Make adjustments using the following items:

a. tray width adjustment

FEEDER>FUNCTION>TRY-A4

FEEDER>FUNCTION>TRY-A5R

FEEDER>FUNCTION>TRY-LTR

FEEDER>FUNCTION>TRY-LTRR

b. CIS read position adjustment (stream reading)

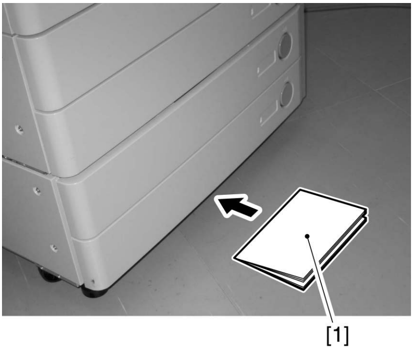
COPIER>FUNCTION>INSTALL>STRD-POS

c. white level adjustment

COPIER>FUNCTION>CCD>DF-WLVL1

COPIER>FUNCTION>CCD>DF-WLVL2

When you have finished the foregoing adjustments, put the P-PRINT printout [1] you have previously generated in the service book cassette to replace the old P-PRINT printout.



F-12-28

12.3 Laser Exposure System

12.3.1 After Replacing the Laser Scanner Unit

Enter the values indicated on the label attached to the laser scanner unit using the following service mode item:

- COPIER>ADJUST>LASER>LA-DELAY

12.4 Image Formation System

12.4.1 After Replacing the Intermediate Transfer Unit

Execute the following service mode item:

- COPIER>FUNCTION>MISC-P>1ATVC-EX

12.4.2 After Replacing the Intermediate Transfer Belt

Execute the following service mode item:

- COPIER>FUNCTION>MISC-P>1ATVC-EX

12.4.3 After Replacing the Primary Transfer Roller

Execute the following service mode item:

- COPIER>FUNCTION>MISC-P>1ATVC-EX

12.4.4 After Replacing the Drum Unit

1) Initialize the drum unit. Execute the following service mode item.

   - COPIER>FUNCTION>CLEAR>DRM-LIFE

While initialization is under way, the machine flashes "ACTIVE" on its screen. It indicates "OK!" at the end of initialization in about 1 min.

⚠Do not touch any of the keys, open the door, or turn off the power while initialization is under way. Otherwise, go back to step 1) and start over.

---

2) When initialization is done, check to see that the value of the following service mode item is '0':

   - COPIER>DISPLAY>MISC>DRM-LIFE

If not '0', go back to sep 1) and start over.

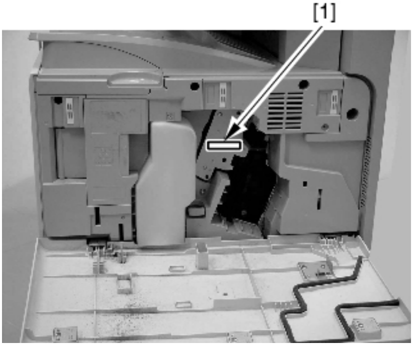
3) Record the value indicated in the following service mode item in the Remarks field of the drum initial value

label (attached to the light-blocking sheet of a new drum unit):

- COPIER>ADJUST>HV-PRI>DR-I-INT

As necessary, record the date of drum unit replacement and the counter reading on the drum initial value label.

4) Attach the drum initial value label to the front [1] of the drum unit.



F-12-29

5) Execute 'Full Adjust' of auto gradation correction in Additional Function.

12.4.5 After Replacing the Developing Unit (Y, M, C)

1) Execute the following service mode item (color):

- COPIER> FUNCTION> INSTALL> STIR-Y/M/C

2) Execute the following service mode item (color):

- COPIER> FUNCTION> INSTALL> INIT-Y/M/C (If you have replaced the Y, M, and C cartridges at the same time, execute INIT-3.)

3) Execute the following service mode item (color):

- COPIER> FUNCTION> INSTALL> SPLY-Y/M/C

4) Record the value for the following service mode item (color) on the service label:

- COPIER> ADJUST> DENS> SGNL-Y/M/C
- COPIER> ADJUST> DENS> REF-Y/M/C

5) Execute 'Full Adjust' of auto gradation correction in Additional Function.

12.4.6 After Replacing the Developing Unit (Bk)

1) Execute the following service mode item:

- COPIER> FUNCTION> INSTALL> STIR-K

2) Execute the following service mode item:

- COPIER> FUNCTION> INSTALL> SPLY-K

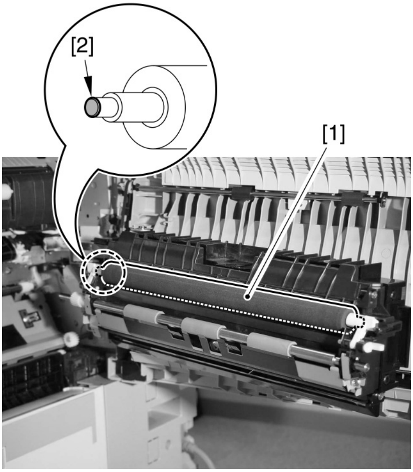
3) Execute the following service mode item; thereafter, check to see that the value has been initialized to '0':

- COPIER> COUNTER> MISC> DV-UNT-K

4) Execute 'Full Adjust' of auto gradation correction in Additional Function.

12.4.7 After Replacing the Secondary Transfer Outside Roller

- If you have replaced the secondary transfer outside roller, be sure to apply about 10 mg of grease (FY9-6008) to the end [2] (side without the blue marking) at the rear of the secondary transfer outside roller [1].



F-12-30

12.5 Fixing System

12.5.1 After Disassembling the Fixing Unit

1) If you have detached any of the following electrical components, check to see if it has been mounted back correctly;

- fixing main thermistor
- fixing sub thermistor
- fixing thermal switch

2) Adjust the fixing roller nip.

Service Mode;

COPIER>FUNCTION>FIXING>NIP-CHK

fixing nip width auto measurement output

12.5.2 After Replacing the Fixing Unit

1) Initialize the fixing roller counter in service mode:

COPIER>COUNTER>MISC>FX-UP-RL

12.5.3 After Replacing the Fixing Roller

1) Initialize the fixing roller counter in service mode:

COPIER>COUNTER>MISC>FX-UP-RL

2) Perform nip adjustments.

12.5.4 Nip Adjustment

Generate a printout of automatic measurement of the fixing nip width.

1) Select 'plain paper' or 'recycled paper' as the type of paper for the cassette 1 (Additional Function> common settings >paper type).

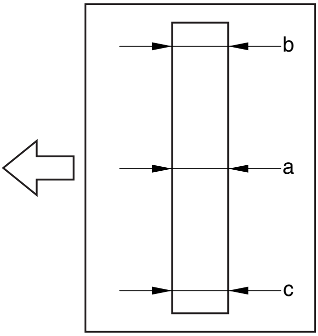
2) Place A4/LTR plain paper or recycled paper in the cassette 1.

3) Press the OK key (so that paper is picked up from the cassette 1).

4) See that the paper is stopped once between the fixing roller and then discharged in about 15 sec.

5) Check to see the nip width of the

discharged paper is as indicated.



F-12-31

standard: b, c

9.25 -0.25, +0.25 mm (less than 5000 sheets)

9.25 +1.25/ -0.25mm difference between b and c 0.5 mm or less (5000 sheets or more)

standard: a (reference only)

from 8.5 to 9.0 mm (less than 5000 sheets)

from 8.5 to 10.0 mm (5000 sheets or more)

Note 1:

The point of measurement for a is in the middle of paper.

Note 2:

The points of measurement for b and c are 10 to 15 mm from the edge of paper.

Note 3:

The arrow in the figure indicates the direction of paper movement.

Note 4:

The nip tends to increase as more and more paper is moved past. There is no need, however, for another session of adjustment each time 5000 sheets have been moved past. If adjustments are needed for some reason, try so that b and c are adjusted to match the median value of 9.25 mm.

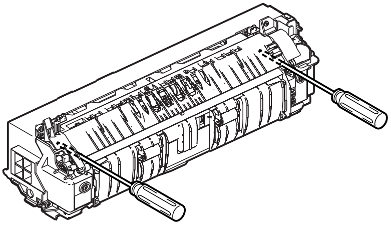
6) If the nip width is not as indicated, perform the following:

6-1) Turn the front and rear adjusting screws to adjust the nip.

EX: if the median value of the nip measurements is closer to the lower limit,

tighten the screw of the side where the nip at the ends is smaller; a full turn of the screw will cause a change of about 0.5 mm.

EX: if the nip balance is correct, turn the screws of both sides.



F-12-32

7) After the work, generate a test print using the following: COPIER> TEST> PG> TYPE6 (grid).

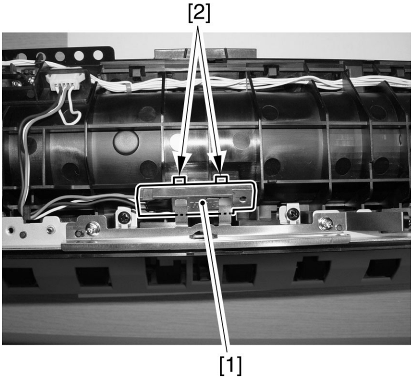
12.5.5 Point to Note About the Position of the Fixing Main Thermistor

⚠Caution 1

Check to be sure that the thermistor cover [2] is fitted under the fixing main thermistor [1].

⚠Caution 2

Check to be sure that the thermistor cover [2] is not mounted in the wrong orientation. The cover is equipped with a protrusion to prevent wrong orientation.



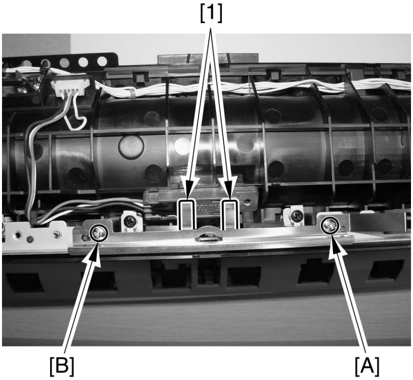
F-12-33

⚠Caution 3

Check to be sure that the spring [1] of the thermistor retainer is found forcing the thermistor.

⚠Caution 4

Be sure to tighten the screw A and then the screw B of the thermistor retainer in sequence.



F-12-34

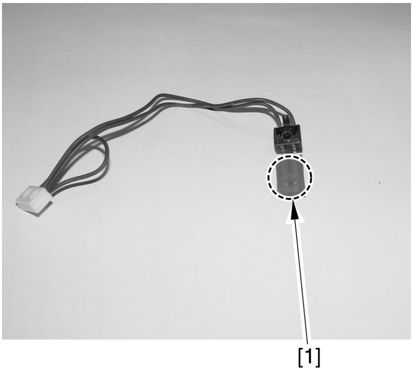
12.5.6 Point to Note When Mounting the Fixing Sub Thermistor

⚠Caution 1

Take care not to touch the surface [1] of the fixing sub thermistor.

⚠Caution 2

Take care not to deform the fixing sub thermistor.



F-12-35

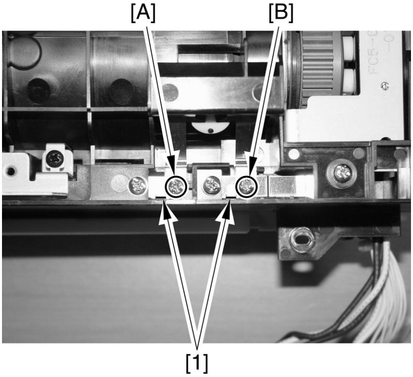
12.5.7 Point to Note When Mounting the Fixing Thermal Switch

Caution 1

Check to be sure that the claw [1] of the thermal switch is in the cut-off of the conducting plate [2].

Caution 2

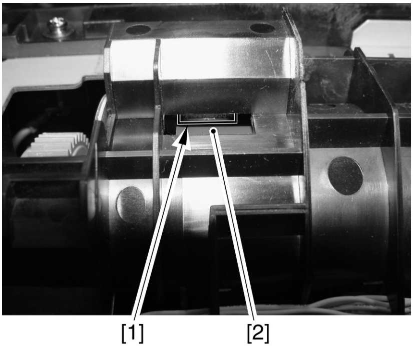
Be sure to tighten the fixing screw A and then the fixing screw B of the thermal switch.



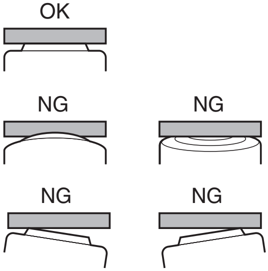
F-12-36

Caution 3

After tightening the fixing screws of the thermal switch, perform the following: Check to be sure that the surface of the thermal switch [1] is level in relation to the fixing roller. (Be sure to use a pen light or the like to shine the thermal switch for this check; if not level, be sure to repeat the mounting work.)



F-12-37


OK
NG
NG
NG
NG

F-12-38

12.6 Electrical Components

12.6.1 After Replacing the Reader Controller PCB

⚠

- Before replacing the reader controller PCB, be sure to generate the latest P-PRINT printout.

<if you are initializing the RAM of the reader controller without replacing the PCB>

- Using the SST, upload the reader controller backup data; after initializing the RAM, download the data, thus eliminating the need for the following adjustment.

1. Reader Unit-Related Adjustment

1) Using the SST, download the latest system software (R-CON).
2) Make the following selections in service mode: COPIER>FUNCTION>CLEAR>R-CON; then, press the OK key to initialize the RAM. Thereafter, turn off and then on the main power.
3) Enter the appropriate values using the following service mode items:

a. standard white plate white level data

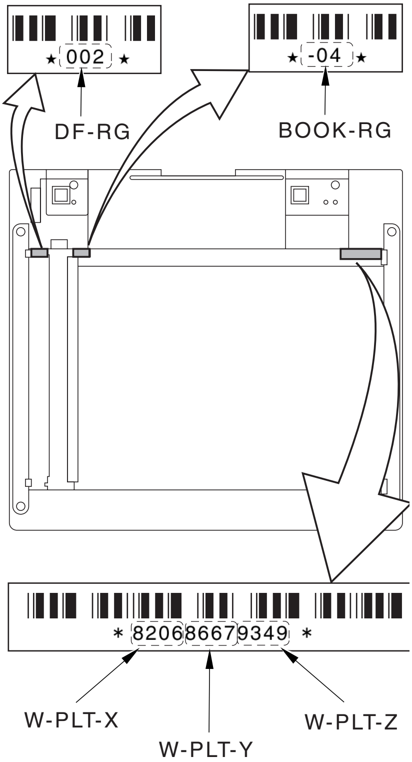
COPIER>ADJUST>CCD>W-PLT-X,Y,Z

b. offset value against color displacement for copyboard glass (copyboard cover)

COPIER>ADJUST>CCD>BOOK-RG

c. offset value against color displacement for copyboard glass (ADF)

COPIER>ADJUST>CCD>DF-RG



F-12-39

d. service label (behind reader unit left cover) values

d-1. CIS read position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-X

d-2. main scanning direction position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-Y

d-3. shading position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-S

d-4. sub scanning direction color displacement correction

COPIER>ADJUST>CCD>CCDU-RG

d-5. main/sub scanning direction MTF value

COPIER>ADJUST>CCD>MTF-MG,SG

d-6. auto gradation correction target value

COPIER>ADJUST>PASCAL>OFST-P-Y,M,C,K

⚠If the value of the following was not 0 before the replacement of the reader controller PCB: COPIER>OPTION>BODY>CCD-LUT.

Set a value other than '0' once again, and make the following adjustments using the D-10 Chart.

COPIER>FUNCTION>CCD>LUT-ADJ2

2. ADF-Related Adjustment

⚠The machine keeps ADF-related service mode data in the RAM of the reader controller; as such, you will have to make the appropriate adjustments if

you have replaced the reader controller or initialized the RAM.

1) Enter the values indicated in the P-PRINT printout you have previously generated for the following:

a. main scanning direction position adjustment (stream reading)

COPIER>ADJSUT>ADJ-XY>ADJ-Y-DF

b. original stop position adjustment

FEEDER>ADJSUT>DOCST

c. original feed speed (magnification) adjustment

FEEDER>ADUST>LA-SPEED

2) Make adjustments using the following items:

a. tray width adjustment

FEEDER>FUNCTION>TRY-A4

FEEDER>FUNCTION>TRY-A5R

FEEDER>FUNCTION>TRY-LTR

FEEDER>FUNCTION>TRY-LTRR

b. CIS read position adjustment (stream reading)

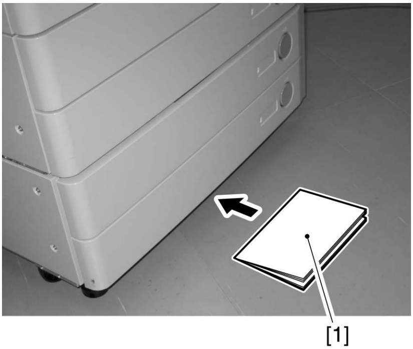
COPIER>FUNCTION>INSTALL>STRD-POS

c. white level adjustment

COPIER>FUNCTION>CCD>DF-WLVL1

COPIER>FUNCTION>CCD>DF-WLVL2

When you have finished the foregoing adjustments, put the P-PRINT printout [1] you have previously generated in the service book cassette to replace the old P-PRINT printout.



F-12-40

12.6.2 After Replacing the DC Controller PCB

⚠Before replacing the DC controller PCB, generate the latest P-PRINT printout:

COPIER>FUNCTION>MISC-P>P-PRINT

1) Download the latest system software by the SST.

2) After replacing the DC controller, initialize the memory of the DC controller PCB using the following service mode item:

COPIER>FUNCTION>CLEAR>DC-CON

3) Enter the values indicated on the service label using the following service mode items:

- COPIER>ADJUST>LASER>**LA-DELAY**
- COPIER>ADJUST>IMG-REG>
  REG-V-Y,M,K
  REG2-V-Y,M,K
- COPIER>ADJUST>DENS>
  SGNL-Y,M,C
  REF-Y,M,C
- COPIER>ADJUST>HV-PRI>
  OFST1-AC
  PRI-GAIN
  PRI-OFST
- COPIER>ADJUST>HV-TR>
  1TR-GAIN,OFST
  2TR-GAIN,OFST
- COPIER>ADJUST>CST-ADJ>
  MF-A4R,A6R,A4
- COPIER>ADJUST>FEED-ADJ>
  REGIST
  ADJ-C1,C2,MF,C1RE,C2RE,C3RE,C4RE
  ADJ-DKRE,MFRE,RG-REFE

4) If any value is recorded in the Remarks field of the service label, enter the value in service mode.

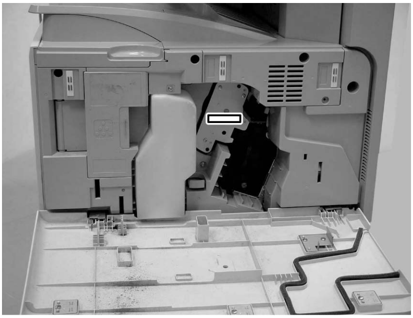
5) Enter the counter backup data indicated in the P-PRINT printout using the following service mode items:

COPIER>COUNTER>MISC>FX-UP-RL

COPIER>COUNTER>MISC>DV-UNT-K

6) Enter the drum film thickness current value in service mode. (The drum film thickness current value is indicated on the drum counter label attached to the front of the drum unit.)

COPIER>ADJUST>HV-PRI>DR-I-INT



F-12-41

7) Turn off the control panel power switch.

8) Turn off and then on the main power switch.

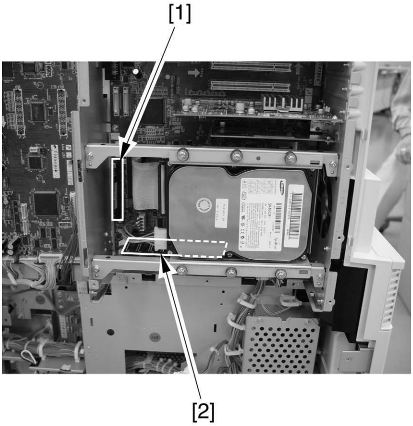
9) Execute the following service mode item of the drum film thickness level setting:

COPIER>ADJUST>HVT-PRI>DRM-CHK

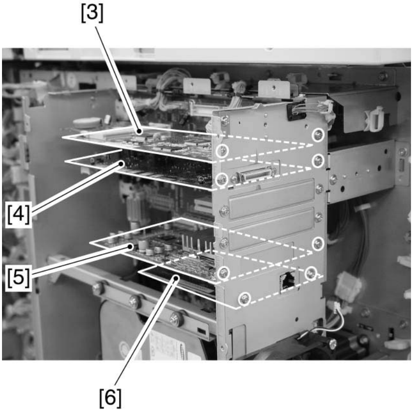
12.6.3 After Replacing the Main Controller PCB (main)

When you have mounted the main controller PCB (main), be sure to mount the PCBs you may have removed before starting the work:

[1] Boot ROM
[2] Image memory (SDRAM)
[3] Expansion bus PCB
[4] Main controller PCB (sub)
[5] UFR board
[6] Ethernet board



F-12-42



F-12-43

12.6.4 After Replacing the SRAM Board

⚠

- Inform the user that replacing the SRAM board will cause all image data in Box to be lost. Be sure to obtain the user's consent before starting the work.
- **Be sure that the SRAM board you are using is a new one.**
  The machine will be likely to malfunction if you use a RAM that has been used in a different printer unit.

1) Replace the SRAM board, and turn on the main power. (The machine will execute automatic initialization.)

2) See that the machine indicates the message "Turn On the Power Switch on the Right Side" on its control panel. Turn off and then on the power.

3) Initialize the RAM.

COPIER>FUNCTION>CLEAR>MN-CON

Make the foregoing selections, and press the OK key.

12.6.5 After Replacing the HDD

A. If NetSpot Accountant (NSA) Is Not Used

1) Format the HDD.

Start up the machine in safe mode (i.e., turn on the main power while holding down the 2 and 8 keys).

Using the SST's HD formatting function, execute formatting of all partitions. (For details, see the instructions on how to upgrade the machine.)

2) Download the system software.

Using the SST, download the system, language, and RUI files.

It may take about 5 min for the machine to start up after a download session.

B. If a Card Reader and NetSpot Accountant (NSA) Are Used

A card ID used by the NSA exists on the HDD. If you have replaced the HDD, you must also download the card data used by the NSA once again; otherwise, you will not be able to make use of statistical management functions of the NSA.

You will first have to format the HDD and download the system software as for A above; thereafter, you need to perform additional steps:

1) Format the HDD.

2) Download the system software.

3) Make the following selections:

COPIER>FUNCTION>INSTALL>CARD

4) Enter a card number.

Enter the number of the first card of those to be used for group control, and press the OK key. (For instance, if the group will be using numbers between 1 through 1000, enter '1'.)

5) Turn off and then on the machine's main power.

6) Make a check.

Make the following selections in Additional Function: system control settings>group ID control>count control; then, check to make sure the following IDs are made ready: ID00000001 through ID00001000.

7) Set the appropriate addresses.

Make the following selections in Additional Function: system control settings>network settings>TCP/IP settings>IP address. Then, set the following addresses: IP address, gateway address, subnet mask.

8) Enter a number.

Make the following selections in Additional Function, and enter a number: system administrator information settings>system control group ID/system control ID No.

9) Turn off and then on the machine's main power.

⚠Unless you set up the system control ID and the system control ID No., you will not be able to register a card to the machine while using NSA.

10) Download the card ID.

Keep the machine in a standby state, and download the card ID through the NSA.

11) Check the count control.

Make the following selections in Additional Function to bring up the Count Control screen: system control settings>group ID control; then, check to see that only the ID data you have downloaded are indicated.

12) Check to see that the operation is normal.

Using a user card that has been registered to the NSA, make copies; then, check that the number of copies you have made are associated with the card you have used in the machine.

12.6.6 When Replacing the HVT PCB

1) Enter the appropriate information using the following 6 service mode items by going through the instructions indicated on the label attached to the HVT PCB:

COPIER> ADJUST> HV-PRI> PRI-GAIN (CHG G)

COPIER> ADJUST> HV-PRI> PRI-OFST (CHG Off)

COPIER> ADJUST> HV-TR> 1TR-GAIN (1TR G)

COPIER> ADJUST> HV-TR> 1TR-OFST (1TR Off)

COPIER> ADJUST> HV-TR> 2TR-GAIN (2TR G)

COPIER> ADJUST> HV-TR> 2TR-OFST (2TR Off)

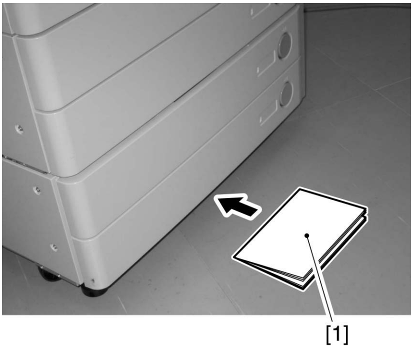
The notations in parentheses indicate the notations as they appear on the PCB label.

2) Record the new values on the service label.

3) Generate a P-PRINT printout in service mode.

4) Put away the generated P-PRINT

printout [1] in the service book case to replace the old printout.



F-12-44

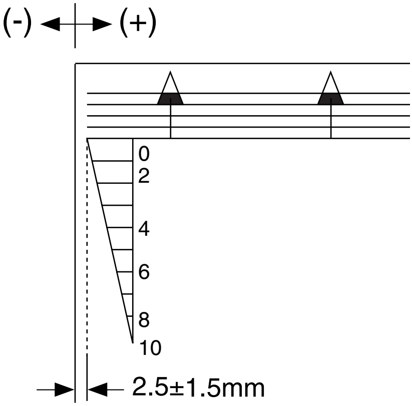
12.7 Pickup/Feeding System

12.7.1 Adjusting the Horizontal Registration When Replacing the Pickup Cassette

- **1st side (mechanical adjustment)**

1)Make copies using the cassette 1/2 as the source of paper; then, check to make sure that the margin on the front side is 2.5 -1.5, +1.5 mm.

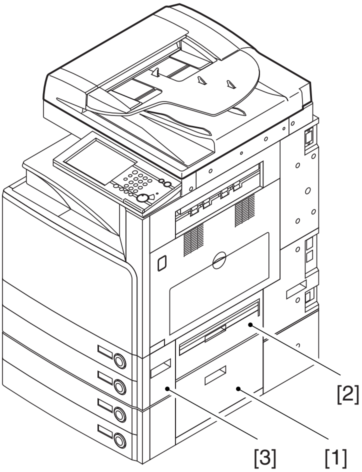
- If the margin is not as indicated, make the following adjustment:



F-12-45

2) If a 2-Cassette Pedestal-Y1 is installed, open the right door [1] of the pedestal.

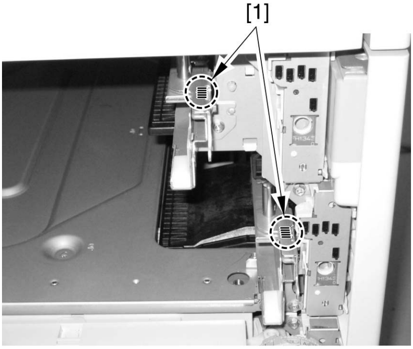
3) After opening the lower right cover [2], remove the 2 screws, and detach the cover (lower front) [3].



F-12-46

4) Slide out the cassette 1 or 2.

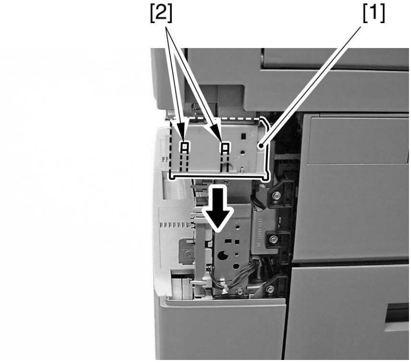
5) Check the index [1] on the adjusting plate.



F-12-47

- Adjusting the Cassette 1

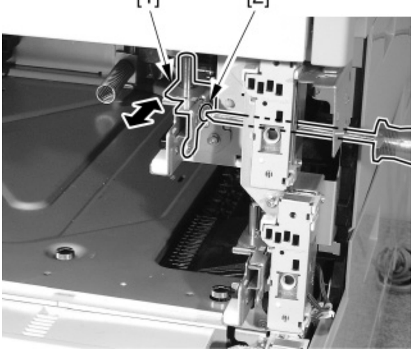
6) Free the 2 claws [2], and detach the grip (right front) [1].



F-12-48

7) Loosen the fixing screw [2] on the adjusting plate [1].

8) Move the adjusting plate back and forth with reference to the index you have checked in step 5). Moving the adjusting plate toward the rear of the machine will increase the margin on the front side of the image.



F-12-49

9) Tighten the fixing screw.

10) Put back the cassette 1.

11) Make copies using the cassette 1 as the source of paper; then, check to make sure that the margin along the image front side is 2.5 +1.5, -1.5 mm.

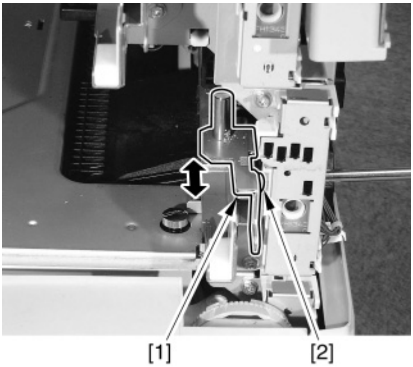
12) Fit back the grip (right front).

13) Attach the machine's right front cover.

- Adjusting the Cassette 2

6) Loosen the fixing screw [2] on the horizontal registration adjusting plate [1] of the cassette.

7) Move the adjusting plate back and forth along the index you checked in step 5). (Moving the adjusting plate toward the rear of the machine will increase the margin on the image front.)



F-12-50

8) Tighten the fixing screw.

9) Fit back the cassette 2.

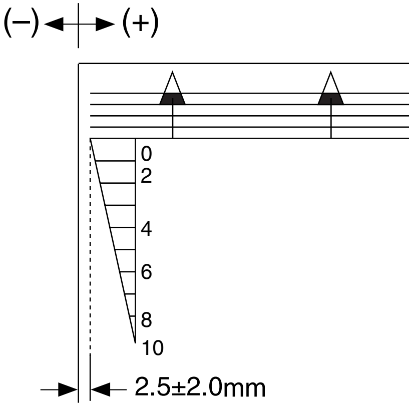
10) Make copies using the cassette 2 as the source of paper; then, check to make sure that the margin on the image front is

2.2 +1.5, -1.5 mm.

11) Fit back the machine's right front cover.

-Margin (2nd side)

1) Make double-sided copies using the cassette you have adjusted for the 1st side; then, check to make sure that the margin on the front side is 2.5 +2.0, -2.0 mm.



F-12-51

2) If the margin is not as indicated, change the adjustment value of the horizontal registration on the 2nd side for the cassette in question.

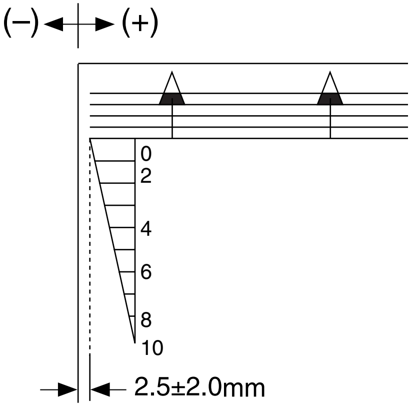
- COPIER>ADJUST>FEED-ADJ>ADJ-C1RE
- COPIER>ADJUST>FEED-ADJ>ADJ-C2RE

An increase by 1 will decrease the margin on the front by 0.1 mm.

3) Record the new adjustment value on the service label.- ADJ-C1RE
- ADJ-C2RE

12.7.2 Adjusting the Horizontal Registration When Replacing the Duplex Unit

1) Make double-sided copies using the cassette 1/2 as the source of paper; then, check to be sure that the margin on the front side is 2.5 -2.0, +2.0 mm.



F-12-52

2) If the margin is not as indicated, change the adjustment value of the horizontal registration on the 2nd side for the cassette in question.

- COPIER>ADJUST>FEED-ADJ>ADJ-

C1RE

- COPIER>ADJUST>FEED-ADJ>ADJ-C2RE

An increase by 1 will decrease the margin on the front side by 0.1 mm.

3) Record the new adjustment value on the service label.

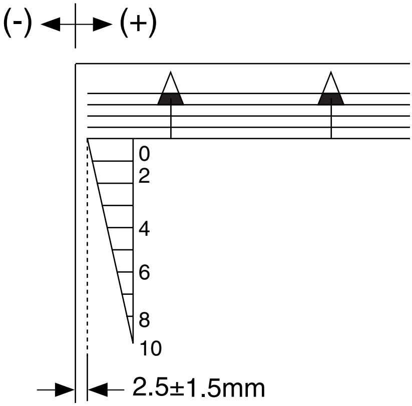
- ADJ-C1RE
- ADJ-C2RE

12.7.3 Adjust the Horizontal Registration for the Manual Feed Tray

- 1st side (mechanical adjustment)

1) Place paper in the manual feed tray. For instructions on how to place paper, see the label attached to the manual feed assembly.

2) Make copies using the manual feed tray as the source of paper; then, check to make sure that the margin on the front side is 2.5 -1.5, +1.5 mm.



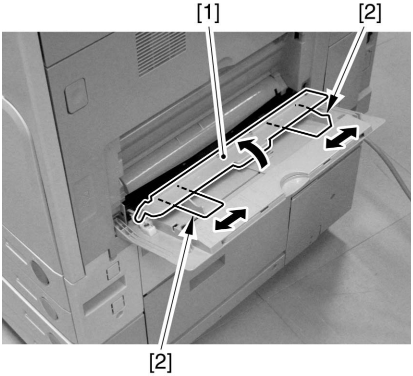
F-12-53

- If the margin is not as indicated, make the following adjustments:

3) Remove the paper from the manual feed tray.

4) Loosen the fixing screw [1] on the manual feed tray upper cover.

5) Move the manual feed tray upper cover back and forth based on the value you checked in step 2). (Moving the manual feed tray upper cover toward the rear of the machine will increase the margin on the front side.

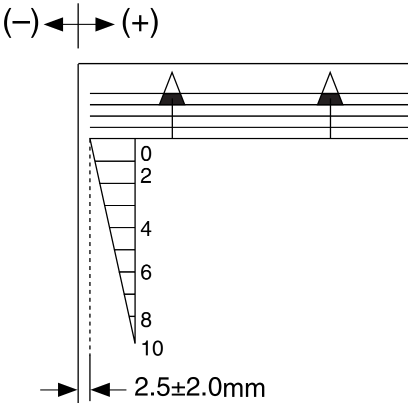


F-12-54

6) Tighten the fixing screw of the manual feed tray upper cover.
7) Place paper in the manual feed tray.
8) Make copies using the manual feed tray as the source of paper; then, check to make sure that the margin on the front side is 2.5 -1.5, +1.5 mm.

- Manual Feed Margin (2nd side)

1) Make double-sided copies using the manual feed tray as the source of paper; then, check to make sure that the margin on the front side of the 2nd side is 2.5 -2.0, +2.0 mm.



F-12-55

2) If the margin is not as indicated, change the adjustment value of the horizontal registration on the 2nd side.
- COPIER>ADJUST>FEED-ADJ>ADJ-MFRE

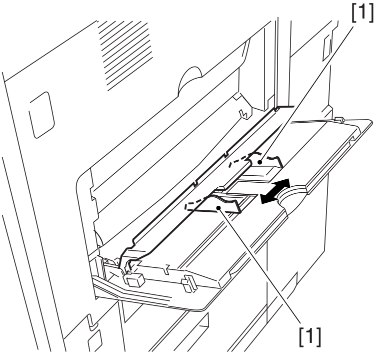
An increase of 1 will decrease the margin on the front side by 0.1 mm.

3) Record the new adjustment value on the service label.
- ADJ-MFRE

12.7.4 Registering the Paper Width Basic Value

1) Turn on the main power switch.
2) Register the paper width basic value for A4R as follows:
2-1) Match the manual feed side guide [1]

against A4R.



F-12-56

2-2) Start service mode, and select 'register manual feed A4R width'.

CPOIER>FUNCTION>CST>MF-A4R

2-3) Press the OK key to store the A4R width.

2-4) Record the A4 basic value indicated on the control panel on the service label.

3) Register the paper width basic value for A4 as follows:

3-1) Match the manual feed guide against A4.

3-2) Select 'register manual feed A4 width' in service mode.

CPOIER>FUNCTION>CST>MF-A4

3-3) Press the OK key to storp the A4 width.

3-4) Record the A4 basic value indicated on the control panel on the service label.

4) Register the A6R paper width basic value as follows:

4-1) Match the manual feed side guide against A6R.

4-2) Select 'register manual feed A6R width' in service mode.

CPOIER>FUNCTION>CST>MF-A6R

4-3) Press the OK key to store the A6R width.

4-4) Record the A4 basic value indicated on the control panel on the service label.

5) Press the Rest key twice to end service mode.

6) Turn off the control panel power switch.

7) Turn off the main power switch.

Chapter 13 Correcting Faulty Images

Contents

13.1 Making lnitial Checks 13-1
  13.1.1 Checking the Site Environment 13-1
  13.1.2 Checking the Paper 13-1
  13.1.3 Checking the Placement of Paper 13-1
  13.1.4 Checking the Durables 13-1
  13.1.5 Checking the Periodically Replaced Parts 13-2
  13.1.6 Checking the Units and Functional Blocks....................................13-2
  13.1.7 Others 13-4
13.2 Test Print 13-5
  13.2.1 Overview 13-5
  13.2.2 Test Print TYPE 13-5
  13.2.3 Selecting Test Print TYPE 13-6
  13.2.4 16-Gradation (TYPE=4)...13-6
  13.2.5 Full Page Halftone (TYPE=5)..13-7
  13.2.6 Grid (TYPE=6)..13-8
  13.2.7 MCYBk Horizontal Stripes (TYPE=10)...13-9
  13.2.8 64-Gradation (TYPE=12)...13-10
  13.2.9 Full Color 16-Gradation (TYPE=14) 13-11
13.3 Troubleshooting 13-13
  13.3.1 Symptoms...13-13
    13.3.1.1 Symptoms...13-13
  13.3.2 Image Faults 13-14
    13.3.2.1 Light Image / Weak Density 13-14
      13.3.2.1.1 Density is different between front and rear sides (front or rear side is light in density), Developer of Y/M/C/BK leaks, Abnormal Noise from developing ass'y...13-14
      13.3.2.1.2 Density is excessively different between front and rear sides . 13-15
      13.3.2.1.3 Developing cylinder locks up...13-15
    13.3.2.2 Out of Focus...13-16
      13.3.2.2.1 Blurred image in main scanning direction only on copies13-16
      13.3.2.2.2 Image registration failure at leading edge because of anomalous

data of DC Controller PCB 13-16
13.3.2.2.3 Blurred Image/Line Caused by Condensation 13-17
13.3.2.2.4 Color Displacement in Sub Scanning Direction 13-17
13.3.2.3 Partially Blank/Streaked 13-19
13.3.2.3.1 White streaks in sub scanning direction.......................... 13-19
13.3.2.3.2 Horizontal White Streaks 13-19
13.3.2.3.3 White Horizontal Lines at Intervals of 75.4 mm 13-21
13.3.2.3.4 Vertical White Line... 13-21
13.3.2.3.5 White Spots Along the Trailing Edge 13-23
13.3.2.3.6 White Spot Indicating Trace of the Pickup Roller.......... 13-24
13.3.2.3.7 Cyclic Image Fault.. 13-25
13.3.2.4 Smudged/Streaked 13-27
13.3.2.4.1 Yellow streaks on full-colored copy, black streaks on black-and-white copy, in sub scanning direction.. 13-27
13.3.2.4.2 Toner scattering inside machine and soiled image because side seal in Transfer Cleaning As'y peeled off 13-27
13.3.2.4.3 Horizontal Black Line Along Leading Edge 13-28
13.3.2.4.4 Fine, Black Line in Stream Read Mode.......................... 13-29
13.3.2.4.5 Rib-Shaped Dirt 13-30
13.3.2.5 Faulty Color Reproduction 13-35
13.3.2.5.1 How to adjust color on prints (color density adjustment)13-35
13.3.2.5.2 Poor Reproduction of Horizontal Fine Lines................. 13-35
13.3.3 Faulty Feeding 13-35
13.3.3.1 Skew Feed... 13-35
13.3.3.1.1 Last Paper Skew (manually fed postcard) 13-35
13.3.3.1.2 Skew in Manually Fed Paper 13-36
13.3.3.2 Fold/Rip 13-37
13.3.3.2.1 Peeling of a Manually Fed Label Sheet 13-37
13.3.4 Malfunction.. 13-37
13.3.4.1 No Power 13-37
13.3.4.1.1 iRC3100 does not start up, Progress bar on start-up window stops at three-quarters point 13-37
13.3.4.1.2 iRC3100 does not start up from sleep state 13-38
13.3.4.1.3 LCD on control panel does not come on (start up) for about 10 seconds when host machine recovers from sleep state 13-39
13.3.4.1.4 iRC3100 does not start up: Power is unintentionally shut off after progress bar on start-up window completes and thereafter iRC3100

never start up 13-39
13.3.4.1.5 iRC3100 does not recover from sleep state; although energy consumption in sleep mode has been set to [High] 13-40
13.3.4.2 Control Panel-Related 13-40
13.3.4.2.1 Cassette Feeding Unit-Y1: Not recognized by iRC3100 13-40
13.3.4.2.2 LCD does not come on although main power indicator on control panel lights up 13-40
13.3.4.2.3 DADF-L1: Original size detection failure / How to adjust tray width of DADF-L1 13-41
13.3.4.2.4 Power lamp light up but LCD on control panel does not: Because BootROM is not securely fitted 13-42
13.3.4.3 Malfunction/Faulty Detection 13-42
13.3.4.3.1 Cassette Feeding Unit-Y1: Paper lifting plate does not ascend upon installation 13-42
13.3.4.3.2 Finisher-P1: Not operate upon installation 13-42
13.3.4.3.3 Paper size detection failure at Cassette 2 13-43
13.3.4.3.4 DADF-L1: Message [Original scanning area is dirty.] / How to adjust white level...13-43
13.3.4.3.5 DADF-L1: Auto orientation feature does not work upon installation 13-44
13.3.4.3.6 DADF-L1: Paper pick-up roller does not ascend because shaft of registration sensor lever comes off 13-45
13.3.4.3.7 iRC3100 displays message prompting to confirm size guide position although designated size of paper is placed on stack bypass13-45
13.3.4.4 Noise 13-45
13.3.4.4.1 Cassette Feeding Unit-Y1: Abnormal noise from drive unit13-45
13.3.4.4.2 Noise at Time of Pickup from the Cassette.....................13-46
13.3.4.5 User Warning Message 13-46
13.3.4.5.1 Message [Check the network connection.] / Message [Check the TCP/IP.]..13-46
13.3.4.5.2 Once arbitrary paper is registered in user mode [Common Settings> Stack Bypass Standard Settings], paper of different paper sizes cannot be copied from stack bypass 13-46
13.3.4.5.3 #853 User Error Code during printing 13-47
13.3.4.5.4 Message 'The file attachment cannot be processed by Internet Fax. No programs can process the file attachment.' is printed out with

text of received I-Fax 13-47
13.3.4.5.5 When attempting to access iRC3100 via Remote UI, message 'User information is invalid' is displayed 13-48
13.3.4.5.6 The machine frequently indicates the message "Clean DF Reading Glass." 13-48
13.3.4.5.7 The machine frequently indicates the message "Clean reading Glass." (The user wants to disable it.) 13-49
13.3.4.6 Other Defect 13-50
13.3.4.6.1 Key Switch Unit-A1: Key not recognized upon installation 13-50
13.3.5 Printing/scanning 13-51
13.3.5.1 No Output 13-51
13.3.5.1.1 2nd page and later are not output or abnormal image is output when attempting to print multiple sheets of huge data from computer 13-51
13.3.5.1.2 #852 User Error Code 13-51
13.3.5.2 Installation Failure 13-51
13.3.5.2.1 Can Send Kit for iRC3200 be used with iRC3100? 13-51
13.3.5.3 Faulty Printing/Scanning Result 13-52
13.3.5.3.1 Message [Waiting to print …] keeps appearing at UFR printing / Half of image becomes solid black 13-52
13.3.5.3.2 Image sent to computer in PDF format (Compact, 300dpi) is scaled down when printing 13-52
13.3.5.3.3 Print settings made in printer driver were not effective when printing multiple sheets of MS Excel data 13-52
13.3.6 Network 13-53
13.3.6.1 Start-Up Failure 13-53
13.3.6.1.1 Utility software (e.g. Network ScanGear) cannot be used, no problem with other functions 13-53
13.3.7 Transmission/Fax-Related 13-53
13.3.7.1 Transmission Problem 13-53
13.3.7.1.1 One-sheet original is output in two sheets at receiving side 13-53
13.3.7.2 Reception Problem 13-54
13.3.7.2.1 iR C3100 cannot receive FAX while it is in sleep state . 13-54
13.3.7.2.2 DADF-L1: Image at receiving side is partially missing at FAX transmission 13-54

13.3.7.3 Other Operational Defect 13-55
13.3.7.3.1 #899 User Error Code: After e-mail or I-Fax transmission 13-55
13.3.8 Jam (Main Unit) 13-56
13.3.8.1 010C JAM CODE: 2nd side of duplex print is jammed because of duplex inlet sensor coming off...13-56
13.3.8.2 Jam Immediately After Pickup (heavy paper, envelope, postcard) 13-56
13.3.8.3 0A0B JAM CODE occurred upon installation of Inner 2way Tray-C1 13-57
13.3.8.4 0D91 JAM CODE: Occurred at all cassettes upon installation13-57
13.3.8.5 Pickup Faults (pickup from the side paper deck)..................13-58
13.3.8.6 Delivery Delay Jam (label sheet) 13-58
13.3.8.7 Pickup Stationary Jam...13-59
13.3.9 Error Code...13-60
13.3.9.1 E004-0001 Error Code: Displayed after opening/closing front panel 13-60
13.3.9.2 E020 Error Code: Occurred upon installation because developer failed to be filled inside developing ass'y 13-61
13.3.9.3 E020 Error Code and Toner scattering inside machine: Because wrong screw is used for fixing developing ass'y............................13-61
13.3.9.4 E021-000x Error Code: Developing rotary does not rotate and abnormal noise comes from motor..13-62
13.3.9.5 E021-0003 Error Code: Occurs during copy, not upon FAX reception but output becomes yellow..13-62
13.3.9.6 E026-0x01 Error Code / Message [Remaining toner is low.] / Toner scattering inside machine 13-63
13.3.9.7 E067-0100 Error Code: Because tension spring for Primary Transfer Roller comes off...13-63
13.3.9.8 E070-0003 Error Code: Improper ground of ITB tension roller shaft in ITB unit 13-64
13.3.9.9 E070-0003 Error Code: Because ITB-HP sensor (PS19) is soiled . 13-64
13.3.9.10 E100 / E110 Error Code: Occurred because J328 connector on DC Controller PCB was not securely fitted..13-65
13.3.9.11 E110 Error Code: Error occurred at the time when paper was delivered to transfer unit 13-65
13.3.9.12 E225-0001 Error Code: Scanning lamp came on................13-66

13.3.9.13 E315-0010/0034/0038 Error Code: Occurred during PCFAX transmission, then host machine rebooted 13-66
13.3.9.14 E351-0000 Error Code: Occasionally occurs while host machine is being energized 13-67
13.3.9.15 E400-0002 Error Code: Because ADF Controller PCB is faulty . 13-67
13.3.9.16 E500 (Finisher-P1).. 13-68
13.3.9.17 E505 (Finisher-P1).. 13-68
13.3.9.18 E514 (Finisher-P1).. 13-68
13.3.9.19 E530 (Finisher-P1).. 13-69
13.3.9.20 E531 (Finisher-P1).. 13-70
13.3.9.21 E532 (Finisher-P1).. 13-70
13.3.9.22 E535 (Finisher-P1).. 13-71
13.3.9.23 E537 (Finisher-P1).. 13-72
13.3.9.24 E540 (Finisher-P1).. 13-72
13.3.9.25 E542 Error Code: Saddle Delivery Tray of Saddle Finisher-Q2 not completely latched 13-74
13.3.9.26 E577 (Finisher-P1).. 13-75
13.3.9.27 E602-0001 Error Code: Ticktack sound is heard upon start-up and then the error code is displayed 13-76
13.3.9.28 E602-0202 Error Code: Recovered after HD-CLEAR 13-77
13.3.9.29 E602-0402 Error Code: Recovered after HD-CLEAR 13-78
13.3.9.30 E602-0111 Error Code.. 13-79
13.3.9.31 E602-0113 Error Code: Because of faulty HDD 13-80
13.3.9.32 E674-0001 Error Code: Because J1210 connector is not securely fitted on Main Controller PCB (Main)... 13-81
13.3.9.33 E732-0001 Error Code: Reader Controller PCB is faulty ... 13-81
13.3.9.34 E732-0001 Error Code: iRC3200 locks up during copying. 13-82
13.3.9.35 E747-8702 / E747-00FF Error Code: Scanning lamp keeps lighting up at its home position when making a copy 13-82
13.3.9.36 E747-0031 Error Code: Half of image becomes blank when printing list in user mode 13-83
13.3.9.37 E803-0002 Error Code: Front Door Switch (SW3) is faulty13-83
13.3.9.38 E803-0001/E227-0004 Error Code: Poor soldering on Printer Power Supply PCB 13-83
13.4 Outline of Electrical Components... 13-85
13.4.1 Clutch/Solenoid.. 13-85

13.4.1.1 Clutch/Solenoid Table....13-85
13.4.2 Motor....13-87
13.4.2.1 Motor Table....13-87
13.4.3 Fan....13-90
13.4.3.1 Fan Table....13-90
13.4.4 Sensor....13-93
13.4.4.1 Sensor Table....13-93
13.4.5 Switch....13-99
13.4.5.1 Switch Table....13-99
13.4.6 Lamps, Heaters, and Others....13-100
13.4.6.1 Lamp. Heaters, and Others Table....13-100
13.4.7 PCBs....13-103
13.4.7.1 PCBs Table....13-103
13.4.8 Variable Resistors (VR), Light-Emitting Diodes (LED), and Check Pins by PCB....13-107
13.4.8.1 Variable Resistors (VR), Light-Emiting Diodes (LED), and Check Pins by PCB....13-107
13.4.8.2 Points to Note about the Leakage Breaker....13-107
13.4.8.3 Main Controller PCB (main)....13-108
13.4.8.4 DC Controller PCB....13-110
13.4.8.5 High-Voltage Power Supply PCB....13-111

13.1 Making lnitial Checks

13.1.1 Checking the Site Environment

a. The voltage of the source of power must be as indicated (+/-10%), and the power plug must remain connected day and night.

b. The temperature and humidity of the site must be as indicated, and the site must be away from a water faucet, water boiler, humidifier; moreover, the machine must not be near a fire or subjected to dust.

c. The site must be free of ammonium gas.

d. The machine must not be subjected to the direct rays of the sun. As necessary, curtains must be furnished.

e. The site must be well ventilated, and its floor must keep the machine level.

f. The machine must remain connected to the wall outlet at all times.

13.1.2 Checking the Paper

a. Check to see if the paper is of a type recommended by Canon.

b. Check to see if the paper is dry. If moist, try paper fresh out of package.

13.1.3 Checking the Placement of Paper

a. Check to see that the amount of paper placed in the cassette and the manual feed tray is as indicated.

b. If transparencies are used, check to see if they are placed in the correct orientation.

13.1.4 Checking the Durables

Check the Durables Table, and replace those parts that have reached the end of the indicated lifetimes.

13.1.5 Checking the Periodically Replaced Parts

Check the Scheduled Servicing Chart and the Periodically Replaced Parts Table, and replace those parts that have reached the end of the indicated lifetimes.

13.1.6 Checking the Units and Functional Blocks

<Reader Unit>
- Check the optical system (contact sensor, white plate, copyboard glass) for a scar, dirt, and foreign matter.
- Check the contact sensor unit to see if it moves smoothly. Check its rail for dirt.
- Check the contact sensor for flickering.
- Check the scanner for condensation.

<Process>
- Check the drum unit/developing unit to see if it is fitted properly.
- Check the photosensitive drum for a scar and dirt.
- Check the patch image read sensor window for dirt.

<Transfer>
- Check the secondary transfer outside roller for wear, scar, dirt, and deformation.
- Check the blade of the cleaning unit for a tear, warping, deformation, and stray toner.

<Fixing>
- Check the fixing roller/pressure roller for wear, scar, dirt, and deformation.
- Check the fixing heater (main/sub) to see if it goes on when the power is turned on.
- Check the fixing thermistor for an open circuit.
- Check the thermal switch for electrical continuity.

<Paper Movement>

- Check to see if there is foreign matter such as paper lint.
- Check the pickup/feed/separation roller for a buildup of paper powder, wear, scar, dirt, and deformation.
- Check the registration roller (middle, outside)/paper path roller for wear, scar, dirt, and deformation.
- Check the feed guide for wear, scar, dirt, and deformation.
- Check the paper for a bent leading edge, curling, waving, and moisture.
- As necessary, try transparencies of a type recommended by Canon to see if the problem, if any, is corrected.

<Machine>

- Check to see if an excess load is imposed on the drive system.
- Check the gears for wear and chipping.

<Cassette>

- Check to see if the cassettes are fitted properly. Check also to see that an appropriate paper size is selected. As necessary, try a normal cassette to see if the problem, if any, stops.
- Check to see that the movement of the cassette holding plate is smooth. Check also to see that the holding plate is free of deformation.
- Check to see if the side guide plate/trailing edge plate inside the cassette are set correctly.
- Check to see if the cassette heater switch is at the ON side (if a cassette heater is fitted).

<Service Mode>

- Check to see that the various CCD adjustment values are as indicated on the service label. (COPIER>ADJUST>CCD>all items)
- Check to see if registration adjustment is correct. (COPIER>ADJUST>FEED-ADJ>REGIST)
- Check to see if the machine inside temperature/humidity is the correct reading. (COPIER>DISPLAY>ANALOG>TEMP/ABS-HUM)
- Check to see that the image read position adjustment is correct. (COPIER>ADJUST>ADJ-XY>ADJ-X/ADJ-Y)
- Check to see if the value for ADJUST/OPTION is as indicated on the service label.
- Check to see if error initialization has been executed. (COPIER>FUNCTION>CLEAR>ERR)

<General>

- Check to see that the power plug is connected properly.
- Check to see that there is the rated AC voltage at the power outlet.
- Check to see that the sensors, clutches, motors, and solenoids operate normally. Check the connectors for poor contact.

(Be sure to check with the General Timing Chart for reference to power/signal routes.)

- Check to see that the leakage breaker/circuit breaker operates normally.
- Check the wiring for trapping and loose screws.
- Check to see that the external cover are all fitted properly.
- Check to see that the main power switch/control panel power switch are at the ON side.
- Check to see that the power cable/signal cable to accessories are correctly routed.
- Check to see that the cover switch operates normally.
- Check the fuses on the PCBs to see if they have blown.
- Check to see that the user knows how to use the machine correctly.

13.1.7 Others

If a machine is brought in from a cold to a warm place, its inside can develop condensation, which will lead to various problems.

a. condensation on the BD sensor can cause faults associated with E100.

b. condensation on the dust-blocking glass can cause the images in sub scanning direction to be too light.

c. condensation on the contact sensor of the reader unit or the copyboard glass can lead to light images.

d. condensation on the pickup/feed guide can cause faulty paper movement.

If d above is noted, be sure to dry wipe the units involved in the feed system.
The same is true of toner cartridges, developing units, and drum units, i.e., when they are unpacked after being brought in from a cold place. To prevent condensation, advise the user to leave the package alone (for about 1 to 2 hr) before opening it.

13.2 Test Print

13.2.1 Overview

The machine offers the following 6 types of test prints (TYPE), each designed for identification of a specific type of image fault. The data for these test prints is prepared by the main controller: if the output of a test print is free of the fault in question, suspect a fault on the PDL input or the reader unit.

13.2.2 Test Print TYPE

T-13-1

Type No.	Description
0	normal copy/print
1 ～ 3	ー (for R&D)
4	16 gradations
5	full half-tone
6	grid
7 ～ 9	ー (for R&D)
10	MCYBk horizontal stripe (sub scanning direction)
11	ー (for R&D)
12	64 gradations
13	ー (for R&D)
14	full color 16 gradations
15 ～ 100	ー (for R&D)

13.2.3 Selecting Test Print TYPE

1) Set the copy count, paper size, and pickup mode (single-sided or double-sided).
2) Make the following selections in service mode: COPIER>TEST>PG.
3) Make the following selections: COPIER>TEST>PG>TYPE.
4) Enter the appropriate TYPE No. using the keypad, and press the OK key.
5) Select the appropriate color using COLOR-Y/M/C/K (output at 1).
6) Set the density using DENS-Y/M/C/K (valid only if TYPE=5).
7) Press the start key.

13.2.4 16-Gradation (TYPE=4)

Use this test print to check gradation, fogging, white line, and uneven density at the front/ rear.

a. Gradation

If the 16-gradation[1] is not properly produced, suspect a fault in the drum unit or the laser exposure system.

b. Fogging

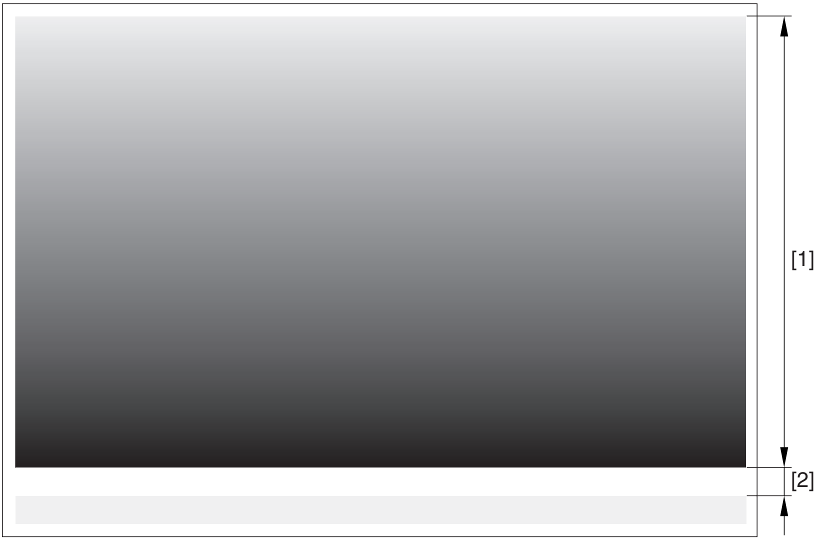
If fogging is found only in the white area[2], suspect a fault in the drum unit or the laser exposure system.

c. White Line

If a white line is found in the image, suspect a fault in the developing system.

d. Uneven Density at the Front/Rear

If uneven density is found at the front/rear, suspect a fault in the drum unit, laser exposure system, or transfer system.



F-13-1

13.2.5 Full Page Halftone (TYPE=5)

Use this test print to check a transfer fault, black line, white line, and uneven density at specific intervals.

Memo:

- You can print out test prints for individual colors by making the following selections in service mode: COPIER>TEST>PG and then COLOR-Y/M/C/K.
- You can also change the density of the test prints by making the following selections in service mode: TEST>PG>DENS>Y/M/C/K.

---

a. Transfer Fault

If a transfer fault (white spot) occurs, suspect a fault in the ITB unit or the secondary transfer outside roller.

b. Black Line

If a black line occurs, suspect a scratch in the photosensitive drum or dirt on the primary charging roller.

c. White Line

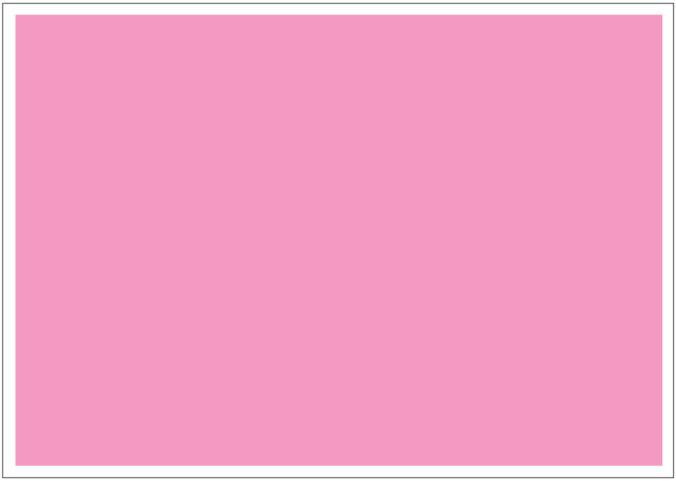
If a white line occurs, suspect a fault in the ITB unit, secondary transfer outside roller, or laser exposure system.

d. Uneven Density

If the density is uneven at specific intervals, suspect the following:
- photosensitive drum (if at 194.7 mm)
- developing cylinder (if at 37.6 mm)

e. Uneven Density

If uneven density occurs, suspect dirt on the dust-blocking glass of the laser unit or deterioration of the ITB.



COLOR-M=1, COLOR-Y/C/K=0

F-13-2

13.2.6 Grid (TYPE=6)

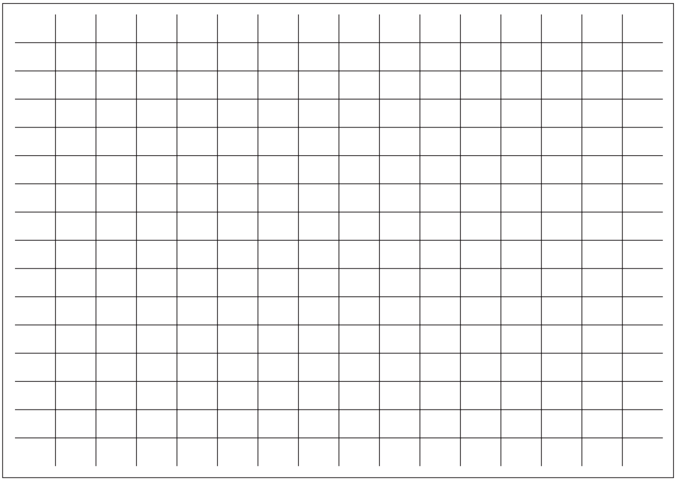
Use this text print to check color displacement, right angles, and straight lines.

a. Color Displacement

If color displacement is found, suspect a scar in the ITB and a fault in the drum unit.

b. Right Angle, Straight Lines

If the right angles or straight lines are not correct, suspect a fault in the laser exposure system, a fault in the shape of the registration (middle/outside) roller, and a fault in the secondary transfer outside roller.



F-13-3

13.2.7 MCYBk Horizontal Stripes (TYPE=10)

Use this test print to check the density of dark areas of individual colors, balance among colors, and white lines associated with development.

a. Solid Density of Individual Colors and Balance Among Colors

- the density must not be appreciably low (too light).
- if the density of a specific color is too low (too light), suspect a fault in the developing system.
- if the density of all colors is low (too light), suspect a fault in the laser exposure system

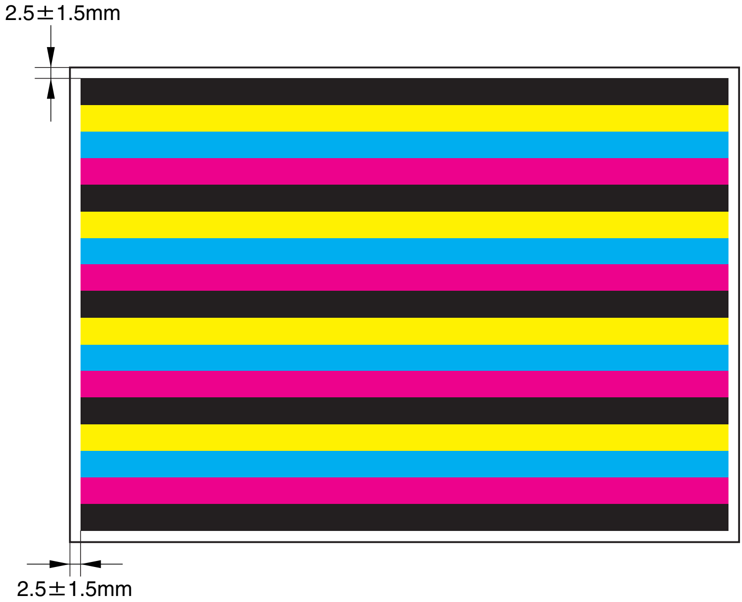
and the transfer block.

b. While Line

If a white line is found in a specific color, suspect a fault in the development system of that particular color.

c. Uneven Density at the Front/Rear

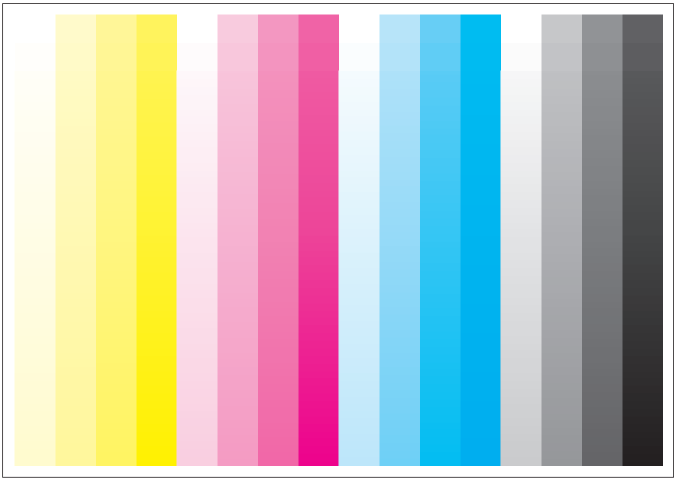
If uneven density is found in a specific color, suspect a fault in the development system of that particular color. If it is found in all colors, suspect a fault in the drum unit, ITB unit, and laser exposure system.



F-13-4

13.2.8 64-Gradation (TYPE=12)

Use this test print to check the gradation of Y, M, C, and Bk at once.



F-13-5

13.2.9 Full Color 16-Gradation (TYPE=14)

Use this test print to check the gray balance, gradation of individual colors (YMCBk), and fogging.

a. Gray Balance

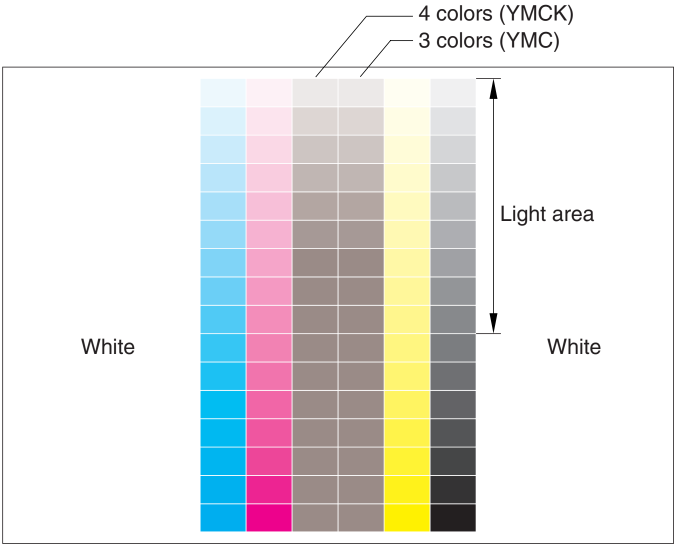
Check the grayscale area to see if the densities of all colors are even.

b. Gradation

Check the gradation of individual colors (YMCBk) and for any difference in color.

c. Fogging

If fogging is found in the white area, suspect a fault in the developing system, a fault in the drum unit, and poor adjustment of the laser exposure system.


4 colors (YMCK)
3 colors (YMC)
Light area
White
White

F-13-6

13.3 Troubleshooting

13.3.1 Symptoms

13.3.1.1 Symptoms

T-13-2

Item	Description
Image fault	blurry image/line caused by condensation
	color displacement in sub scanning direction
	white spot in horizontal direction
	horizontal lines at intervals of 75.4 mm
	vertical white line
	round, white spot along trailing edge
	white spot indicating traces of pickup roller
	cyclic image fault
	black line along leading edge
	fine, black line in stream reading
	rib-shaped dirt
	poor reproduction of horizontal fine line
Paper movement fault	skew of last postcard from manual feed tray
	skew of paper from manual feed tray
	peeling of a manually fed label sheet
Operation fault	noise during pickup from cassette

Item	Description
Jam (machine)	pickup fault from side paper deck
	jam immediately after pickup (heavy paper, envelope, postcard)
	delivery delay jam (label sheet)
	Pickup Stationary Jam

For details, see the remedies given for individual faults.

13.3.2 Image Faults

13.3.2.1 Light Image / Weak Density

13.3.2.1.1 Density is different between front and rear sides (front or rear side is light in density), Developer of Y/M/C/BK leaks, Abnormal Noise from developing ass'y

[Case in the field]

< Field Remedy >

In the field, this symptom occurred because the developing ass'y was transferred in a vertical position to a site after pre-installation of the host machine, causing the developer to lean to one side.

Follow the steps below:

1. Visually inspect the surface of the developing cylinder of the affected developing ass'y. If the developer extremely accumulates at one point, go to the Step 4. If not, it is possible the developing ass'y can recover, so go to the Step 2.
2. Rotate the developing cylinder while softly swaying the developing ass'y from side to side in order to uniform the amount of the developer on the surface.
3. Install the developing ass'y and check whether or not the symptom recurs. If it recurs, go to the Step 4.
4. Replace the developing ass'y with a new one.

Developing Ass'y (BLACK): FM2-0056

Developing Ass'y (YELLOW): FM2-0057

Developing Ass'y (MAGENTA): FM2-0058
Developing Ass'y (CYAN): FM2-0059
Note: Be sure not to transfer the developing ass'y in a vertical position when it is transferred after pre-installation or as a service part.

13.3.2.1.2 Density is excessively different between front and rear sides

[Case in the field]

Field Remedy

In the field, this symptom occurred because the Main Controller PCB (Main) was faulty. Follow the steps below:

1. Make a copy and output a PG test print.
If the symptom occurs only on the copy, it is possible the Contact Image Sensor (CIS) is faulty. If it occurs only on the PG test print or on both, go to the Step 2.
2. Make sure that the connectors on the Main Controller PCB are securely fitted or there is no pinched cable, and whether the BootROM and SDRAM are securely fitted. If no problem is found, go to the Step 3.
3. Remove the Resolution Switch PCB and the UFR Board PCB in that order, and output a PG test print each time of removal. If the symptom still recurs, go to the Step 4.
4. Replace the Main Controller PCB (Main) with a new one.

Main Controller PCB (Main) Ass'y: FG3-3221
Contact Image Sensor Ass'y: FM2-1563
Resolution Switch PCB Ass'y: FG3-2728
UFR Board PCB Ass'y: FG3-3223

13.3.2.1.3 Developing cylinder locks up

[Case in the field]

Field Remedy

In the field, this symptom occurred because the developing ass'y was transferred in a vertical position to a site after pre-installation of the host machine, causing the developer to lean to one side.

Follow the steps below:
1. Visually inspect the surface of the developing cylinder of the affected developing ass'y. If the developer extremely accumulates at one point, go to the Step 4. If not, it is possible the developing ass'y can recover, so go to the Step 2.
2. Rotate the developing cylinder while softly swaying the developing ass'y from side to side in order to uniform the amount of the developer on the surface.
3. Install the developing ass'y and check whether or not the symptom recurs. If it recurs, go to the Step 4.
4. Replace the developing ass'y with a new one.
Developing Ass'y (BLACK): FM2-0056
Developing Ass'y (YELLOW): FM2-0057
Developing Ass'y (MAGENTA): FM2-0058
Developing Ass'y (CYAN): FM2-0059
Note: Be sure not to transfer the developing ass'y in a vertical position when it is transferred after pre-installation or as a service part.

13.3.2.2 Out of Focus

13.3.2.2.1 Blurred image in main scanning direction only on copies

[Case in the field]

Cause

In the field, this symptom occurred because the Main Controller PCB (sub) was faulty (1 case).

Field Remedy

1. Make sure that the connectors on the Main Controller PCB are securely fitted or there is no pinched cable. If the symptom still recurs, go to the Step 2.
2. Replace the Main Controller PCB with a new one.
Main Controller PCB (main): FG3-3221

13.3.2.2.2 Image registration failure at leading edge because of anomalous data of DC Controller PCB

[Inspected by Canon Inc.]

Cause

As a result of inspection, it was found that this symptom occurred because the data of the DC Controller PCB was anomalous.

Field Remedy

1. Check whether the values indicated in the service label attached to the inside of the front cover are input in the corresponding service mode. If not, input the value indicated in the service label in service mode.
2. Adjust the registration in service mode [COPIER> Adjust> FEED-ADJ> REGIST (-50 to 50)].
3. If the symptom still recurs, initialize RAM on the DC Controller PCB as follows: Output a P-PRINT that lists the service mode settings in service mode [COPIER> Function> MISC-P> P-PRINT]. Then, select [COPIER> Function> CLEAR> DC-CON] and press OK. Turn the power OFF/ON afterwards. Enter the service mode settings once again by referring to P-PRINT as necessary.

13.3.2.2.3 Blurred Image/Line Caused by Condensation

<Cause>

The machine fails to create normal images because of condensation.

<Field Remedy>

Remove the left cover and the delivery tray, and leave the machine alone so that it will become used to the room temperature.

13.3.2.2.4 Color Displacement in Sub Scanning Direction

<Cause>

- The transfer to the ITB has become displaced because of a shock occurring when the ITB cleaning blade is engaged/disengaged.
- Transfer to the ITB has become displaced because of a shock occurring when the secondary transfer outside roller is engaged/disengaged.

<Field Remedy>

Make the following selections in service mode to make adjustments: COPIER>ADJUST>IMG-REG.

Service mode: COPIER>ADJUST>IMG-REG
Use it to fine-adjust the image sub scanning direction start position.
- REG-V-Y (Y, 1st side)
- REG-V-M (M, 1st side)
- REG-V-K (K, 1st side)
- REG2-V-Y (Y, 2nd side)
- REG2-V-M (M, 2nd side)
- REG2-V-K (K, 2nd side)

<Making Adjustments>
- An increase by '1' will move the image by a single pixel (about 0.04 mm) toward the rear.
- Be sure to enter the values indicated on the service label if you have initialized the RAM on the DC controller PCB or replaced the DC controller PCB.

<Range of Adjustment>
-10 to +10 (unit: pixel) [at time of shipment: factory value] [at time of RAM initialization: 0]

Service mode: COPIER>OPTION>BODY>TBLD-TMG (level 2)
Timing of Execution of ITB Cleaning in Direct, Full Color Mode

<Settings>
0: do not delay [at time of shipment/after RAM initialization]
1: delay

<Note>
Setting it to '1' will lead to lowered productivity.

13.3.2.3 Partially Blank/Streaked

13.3.2.3.1 White streaks in sub scanning direction

[Case in the field]

Cause

In the field, this symptom occurred because foreign substances were trapped inside the developing ass'y.

Field Remedy

1. Output each color of test print (Y/M/C/Bk) in service mode:
Change the set value from [0] to [5] in [COPIER> Test> PG> TYPE]. In order to output a test print in e.g. yellow (single color), set [1] for [COLOR-Y] and [0] for [COLOR-M/COLOR-C/COLOR-K]. Then press the start key. For Magenta, Cyan and Black, do the same thing by setting [1] for each color.
2. If white streaks appear on any of the test prints, inspect the affected developing ass'y to see any scratches on the developing cylinder surface or any foreign substances between the cylinder and the blade.

Checking Method:

Move toner between the cylinder and the blade using a sheet of OHT. If the position of the white streaks is changed, foreign substances might be the root cause.

Developing Ass'y (BLACK): FM2-0056
Developing Ass'y (YELLOW): FM2-0057
Developing Ass'y (MAGENTA): FM2-0058
Developing Ass'y (CYAN): FM2-0059

13.3.2.3.2 Horizontal White Streaks

<Notes>

This symptom tends to occur in a full color, halftone image made in a high temperature/humidity environment.

<Cause>

The secondary transfer outside roller has been left in contact with the ITB, thus causing a secondary transfer fault.

<Field Remedy>

Execute the following in service mode: COPIER>FUNCTION>CLEANING>TBLT-CLN.

<Caution>

The machine moves the secondary transfer roller away from the ITB for the following:

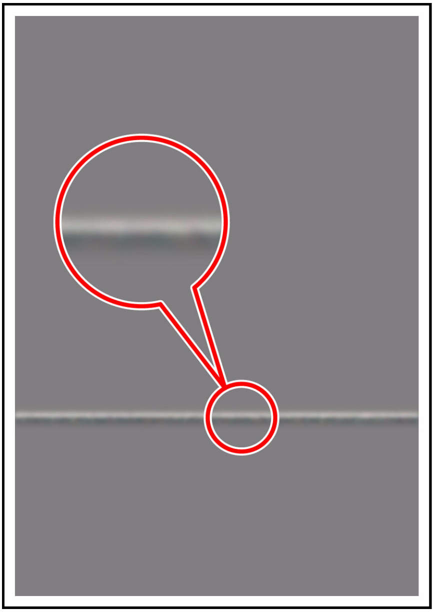
- about 30 sec after it enters a standby state.
- the control panel power switch is tuned off.

If the main power switch is turned off in about 30 sec after the machine enters a standby state, the machine cannot move the secondary transfer roller away from the ITB, leaving it in contact with the ITB.

<Notes>

The symptom starts to appear when the secondary transfer outside roller is left in contact with the ITB for about 30 min to 1 hr; it tends to disappear when about 200 sheets of paper have been moved past.

<Image Sample>



F-13-7

13.3.2.3.3 White Horizontal Lines at Intervals of 75.4 mm

<Notes>

This symptom tends to occur on the 2nd side of a halftone image print.

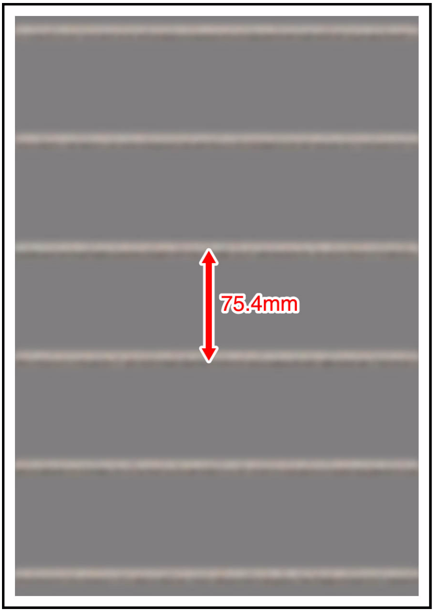
<Cause>

The secondary transfer outside roller is approaching the end of its life, thus starting to show abnormal discharge.

<Field Remedy>

Replace the secondary transfer outside roller.

<Image Sample>

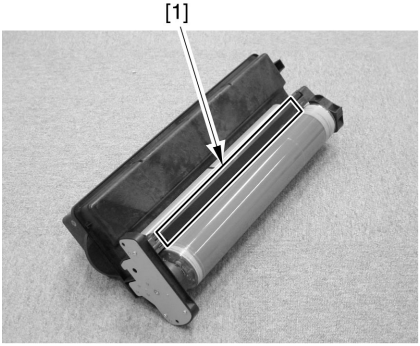


F-13-8

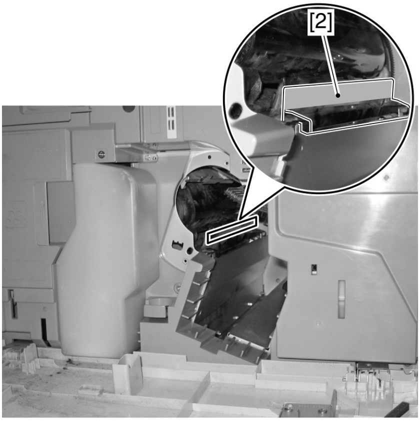
13.3.2.3.4 Vertical White Line

<Cause>

There is adhesion of dust in a specific area [1] or [2] of the drum unit or scanner hood, respectively.



F-13-9



F-13-10

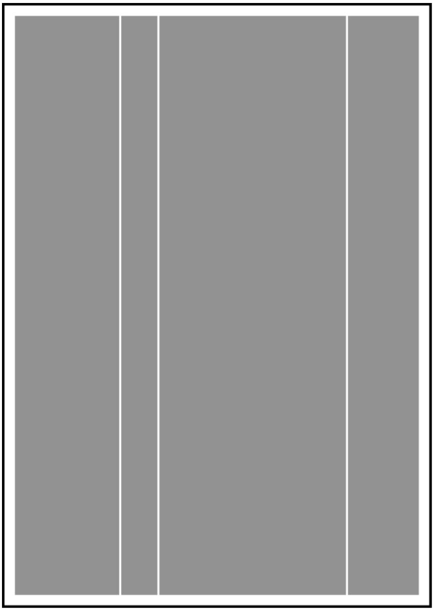
<Field Remedy>

Dry wipe the area [1] or [2] of the drum unit or the scanner hood, respectively with a moist cloth.

<Caution>

Never dry wipe the areas; otherwise, static charges will occur and attract dust.

<Image Sample>



F-13-11

13.3.2.3.5 White Spots Along the Trailing Edge

<Notes>

This symptom tends to occur in a low humidity environment.

<Cause>

The movement of paper is disrupted when the secondary transfer roller moves away.

<Field Remedy>

Make adjustments using the following service mode item: COPIER>ADJUST>BLANK>BLANK-B.

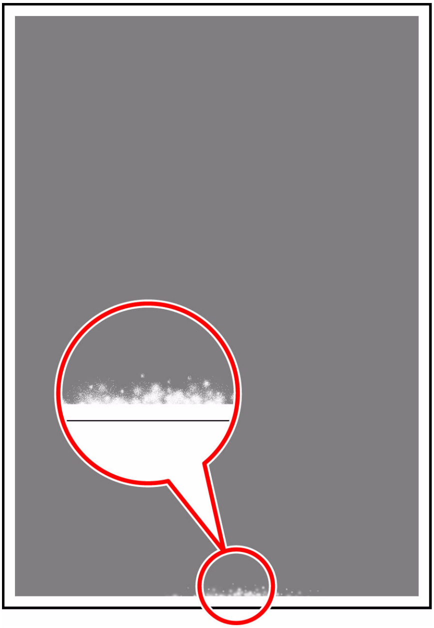
T-13-3

BLANK-B	**Use it to enter an adjustment value for the non-image width (trailing edge).**
Method of adjustment	Enter the value indicated on the service label if you have initialized the RAM on the main controller PCB or replaced the SRAM PCB.
Range of adjustment	0 to 1000 [at time of shipment/at time of RAM initialization, +59]

<Caution>

Executing this field remedy will increase the trailing edge margin/non-image width.

<Image Sample>



F-13-12

13.3.2.3.6 White Spot Indicating Trace of the Pickup Roller

<Notes>

This symptom tends to occur in a high temperature/humidity environment.

<Cause>

An ingredient contained in the pickup roller builds up on the ITB, causing the white spots.

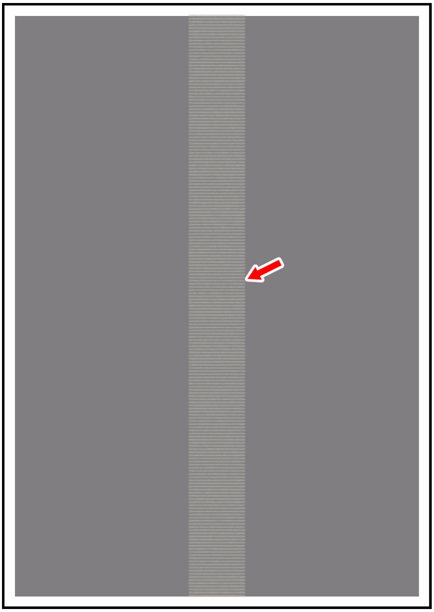
<Field Remedy>

1. Replace the ITB.
2. If FB6-3406 (w/ green collar) is used as the feed roller/separation roller, replace it with the roller designed for the iR C3100 Series (see the Parts Catalog).

<Caution>

Do not use FB6-3406 (w/ green collar) as the feed roller/separation roller to avoid white spots.

<Image Sample>



F-13-13

13.3.2.3.7 Cyclic Image Fault

<Notes>

This symptom tends to occur in sub scanning direction.

<Field Remedy>

See the following table to identify the part; then, clean or replace the part:

T-13-4

Interval (mm)	Part
14.1	fixing outlet sensor roll
15.7	fixing inlet roll
27.3	delivery roll
29.5	fixing outlet roll
37.6	developing cylinder
40.8	registration roller (middle)
44.0	primary charging roller
45.4	delivery roller
46.3	duplexing feed roller 1/2
50.2	primary transfer roller
	pickup roller
	vertical path roller 1/2
	vertical path slave roller
50.5	registration roller (outside)
56.5	duplex feed roller 1/2
62.8	fixing outlet roller
65.9	secondary transfer inside roller
75.4	secondary transfer outside roller
	feed roller
	separation roller

Interval (mm)	Part
113.0	manual feed pickup roller
119.3	pressure roller
152.3	fixing roller
194.7	photosensitive drum
584.0	ITB

13.3.2.4 Smudged/Streaked

13.3.2.4.1 Yellow streaks on full-colored copy, black streaks on black-and-white copy, in sub scanning direction

[Case in the field]

Field Remedy

In the field, this symptom occurred because the Contact Image Sensor (CIS) was faulty (1 case). Follow the steps below:
In service mode [COPIER> Test> PG], select either of 4, 5, 6, 10, 12, or 14 for [TYPE] to output a test print. If no streak appears on the test print, it is possible that the CIS is faulty, so replace it with a new one.
Contact Image Sensor Ass'y: FM2-1563
After replacement, follow the instructions described in Service Manual [Chapter 12 Standards and Adjustments > Scanning System > After Replacing the CIS].

13.3.2.4.2 Toner scattering inside machine and soiled image because side seal in Transfer Cleaning As'y peeled off

[Case in the field]

Field Remedy

In the field, it was found that toner scattered inside the machine upon installation because the side seal in the Transfer Cleaning Ass'y (FM2-0082) peeled off. Check whether or not the side seal peels off when this symptom occurs.

Transfer Cleaning Ass'y (ITB Cleaning Unit): FM2-0082

13.3.2.4.3 Horizontal Black Line Along Leading Edge

<Notes>

This symptom tends to occur in a high temperature/humidity environment.

<Cause>

The movement of paper is disrupted during secondary transfer.

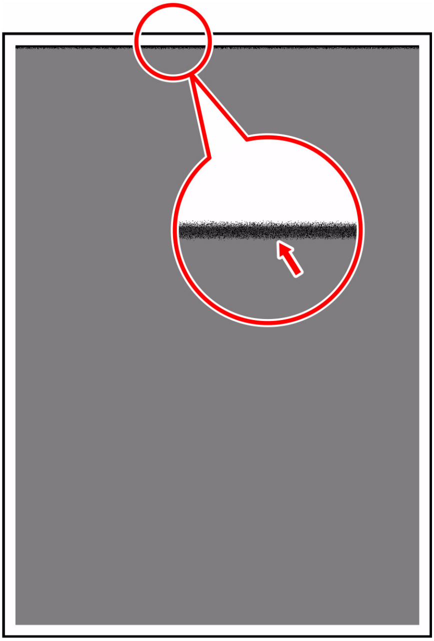
<Remedy>

Increase the value of the following service mode item: COPIER>ADJUST>BLANK>BLANK>-T.

<Caution>

Execution of this field remedy will increase the leading edge margin/non-image width.

<Image Sample>



F-13-14

13.3.2.4.4 Fine, Black Line in Stream Read Mode

<Cause>

Dust causing black streaks has 2 types, and measures to be taken against the streaks differ depending upon the dust type.

- Airborne Dust
Suspended on the DADF feeding path.
- Adherent Dust
Adhered to the DADF reading glass.

<How to Identify the Dust Type>
- Airborne Dust
Cause is regarded as airborne dust if black streaks are short at random.
- Adherent Dust
Cause is regarded as adherent dust if black streaks are long in the same direction (height direction).
<Field Remedy>
- Measures against airborne dust
1)Clean the white mylar and platen roller to remove dust.
2)Clean inside the DADF to remove dust.

For environment where user often uses paper containing much paper dust, however, there is possibility that black streaks caused by airborne dust still occur even after these measures are taken. In this case, advise user to make the background removal setting in user mode.

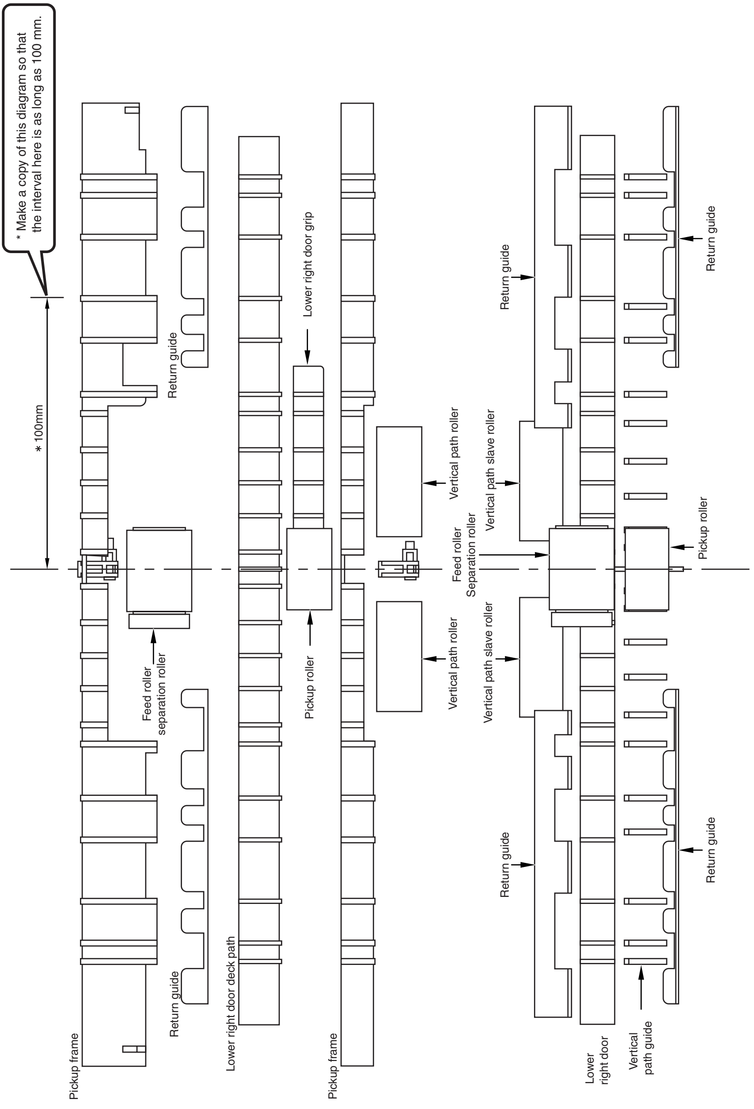
- Measures against adherent dust
1)Clean the DADF reading glass (using silicone oil and cleaning tissue).
For environment where black streaks caused by adherent dust often occur, advise user to clean the reading glass with cleaning tissue.
2)Fix the reading position at 6.5mm. (In service mode, COPIER>OPTION>BODY and set 2 to DST-POS.)

This reading position can prevent the DADF reading glass from adhesion of much dust (since document does not come in contact with the glass). In other words, black streaks appear as long as any dust is adhered to this position.

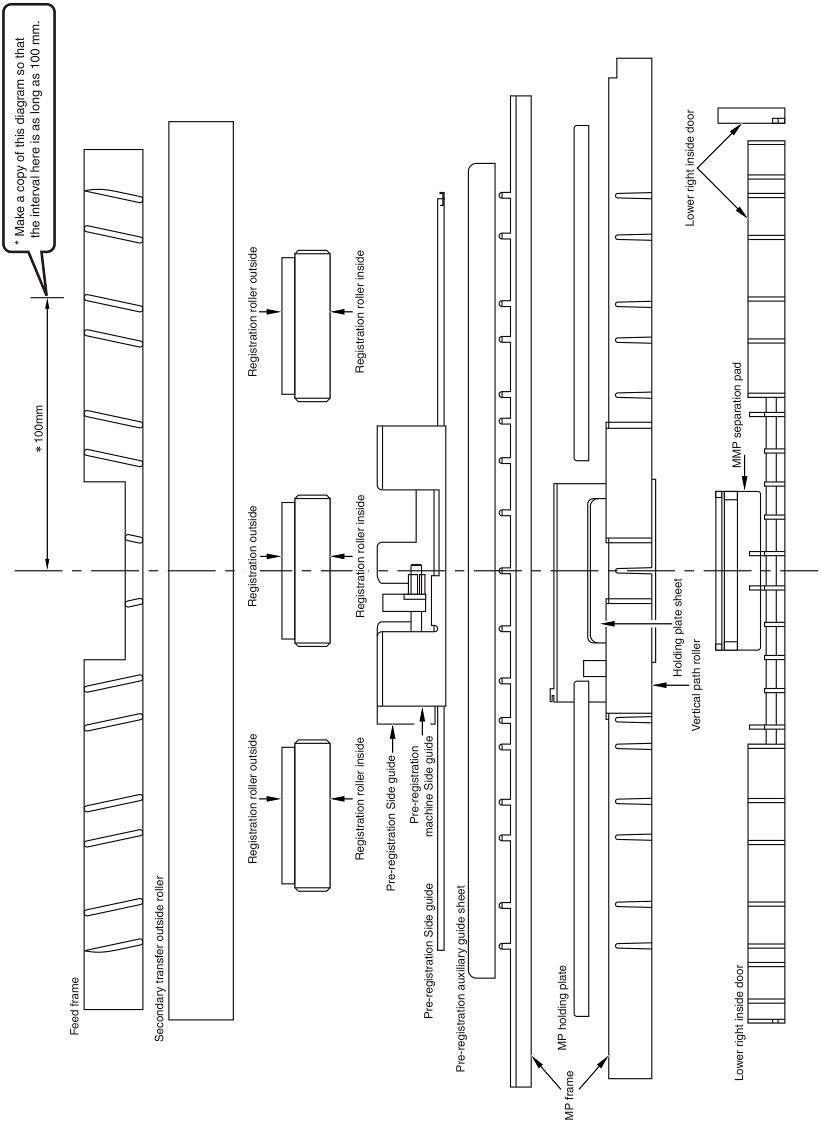
If black streaks often occur even after these measures are taken, advise user to make the background removal setting in user mode.

13.3.2.4.5 Rib-Shaped Dirt

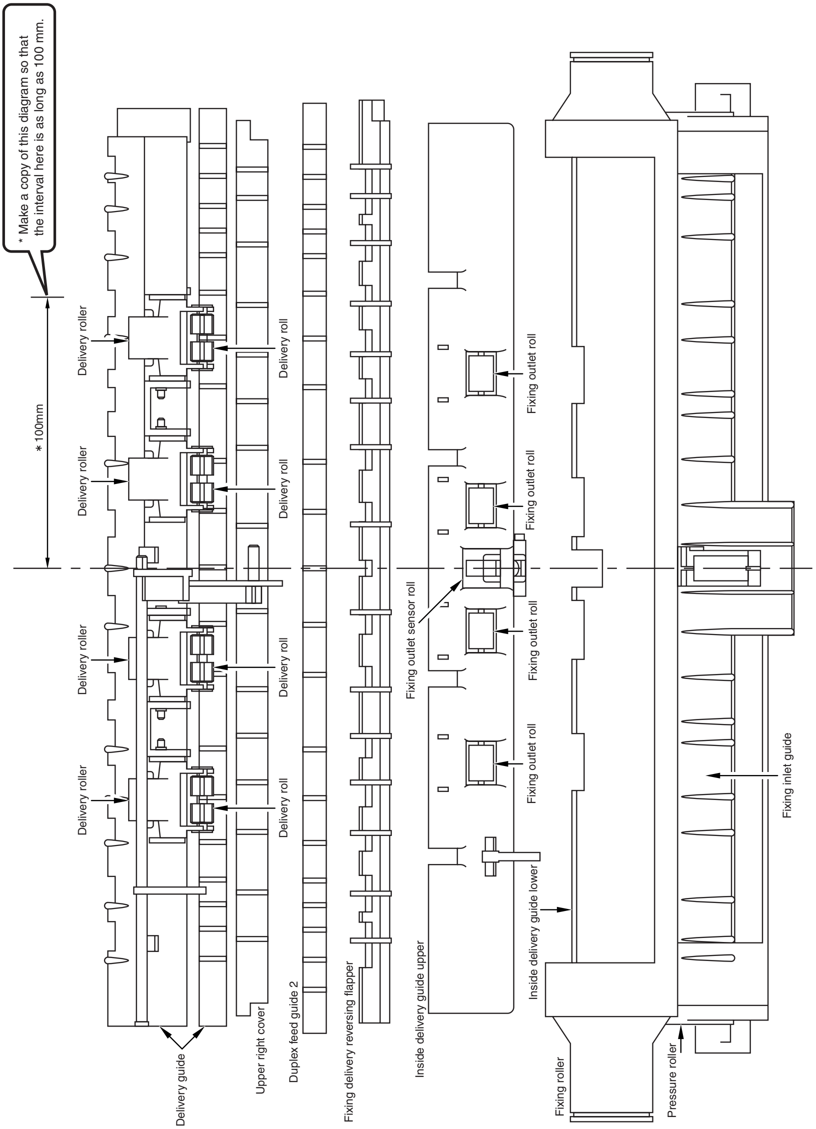
<Cause>
A rib in the path is soiled with stray toner or paper powder to cause dirt in the form of a rib.
<Field Remedy>
Clean the area of the rib identified by the map that follows.


* Make a copy of this diagram so that the interval here is as long as 100 mm.
*100mm
Return guide
Feed roller
separation roller
Return guide
Pickup frame
Lower right door deck path
Lower right door grip
Pickup roller
Pickup frame
Vertical path roller
Vertical path roller
Feed roller
Separation roller
Vertical path slave roller
Vertical path slave roller
Return guide
Return guide
Lower
right door
Vertical
path guide
Return guide
Pickup roller
Return guide

F-13-15


* Make a copy of this diagram so that the interval here is as long as 100 mm.
* 100mm
Feed frame
Secondary transfer outside roller
Registration roller outside
Registration roller inside
Registration outside
Registration roller inside
Registration roller outside
Registration roller inside
Pre-registration Side guide
Pre-registration machine Side guide
Pre-registration Side guide
Pre-registration auxiliary guide sheet
MP frame
MP holding plate
Holding plate sheet
Vertical path roller
Lower right inside door
MMP separation pad
Lower right inside door

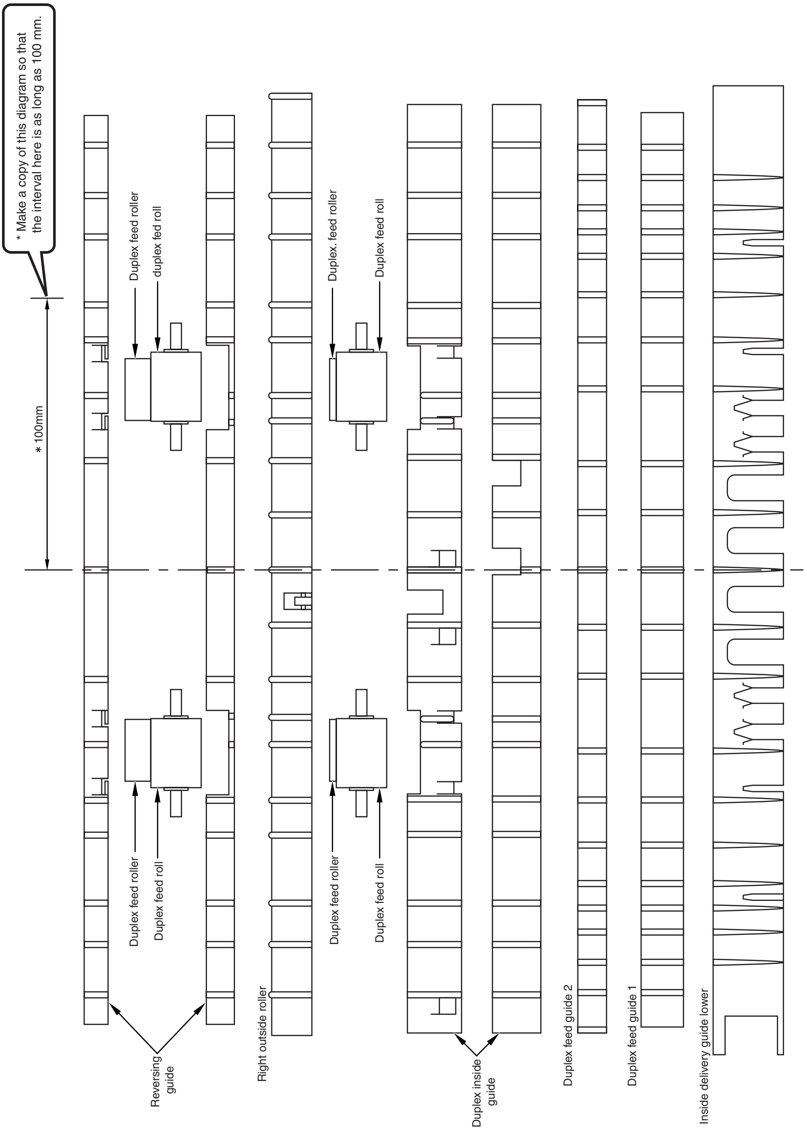
F-13-16



* Make a copy of this diagram so that the interval here is as long as 100 mm.

*100mm
Delivery roller
Delivery roller
Delivery roller
Delivery roller
Delivery roll
Delivery roll
Delivery roll
Delivery roll
Delivery guide
Upper right cover
Duplex feed guide 2
Fixing delivery reversing flapper
Fixing outlet sensor roll
Inside delivery guide upper
Fixing outlet roll
Fixing outlet roll
Fixing outlet roll
Fixing outlet roll
Inside delivery guide lower
Fixing roller
Pressure roller
Fixing inlet guide

F-13-17


* Make a copy of this diagram so that the interval here is as long as 100 mm.

*100mm
Duplex feed roller
duplex fed roll
Duplex. feed roller
Duplex feed roll
Duplex feed roller
Duplex feed roll
Duplex feed roller
Duplex feed roll
Reversing guide
Right outside roller
Duplex inside guide
Duplex feed guide 2
Duplex feed guide 1
Inside delivery guide lower

F-13-18

13.3.2.5 Faulty Color Reproduction

13.3.2.5.1 How to adjust color on prints (color density adjustment)

[Case in the field]

Field Remedy

In user mode [Printer Settings> Settings> Print Quality> Density], select any color you want to adjust.

13.3.2.5.2 Poor Reproduction of Horizontal Fine Lines

<Notes>

This fault tends to occur in text/photo/map mode and photo mode.

<Cause>

- characteristics of the contact image sensor
- image processing characteristics used for text

<Field Remedy>

Recommend the use of film photo/print photo mode.

13.3.3 Faulty Feeding

13.3.3.1 Skew Feed

13.3.3.1.1 Last Paper Skew (manually fed postcard)

<Note>

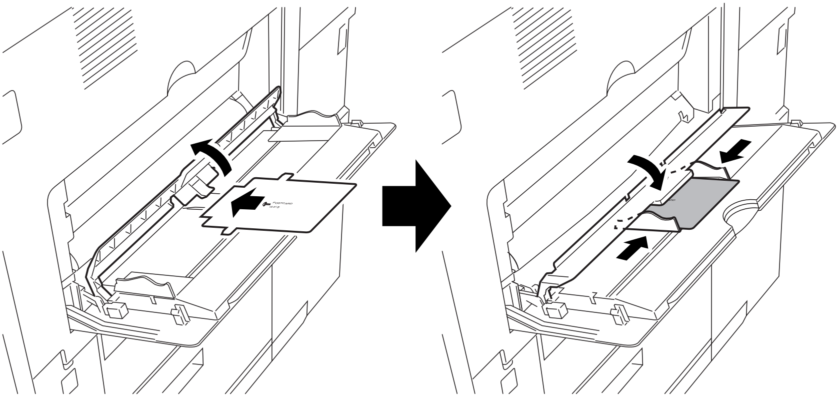
This symptom tends to occur on last sheets of paper.

<Cause>

The last of a group of postcards tends to be subject to friction by the separation pad, at times causing the side guide plate to fail to move it along a straight path.

<Field Remedy>

Advise the user to use an MP sheet (FC5-6560; available as a separate remedy) when using postcards.



F-13-19

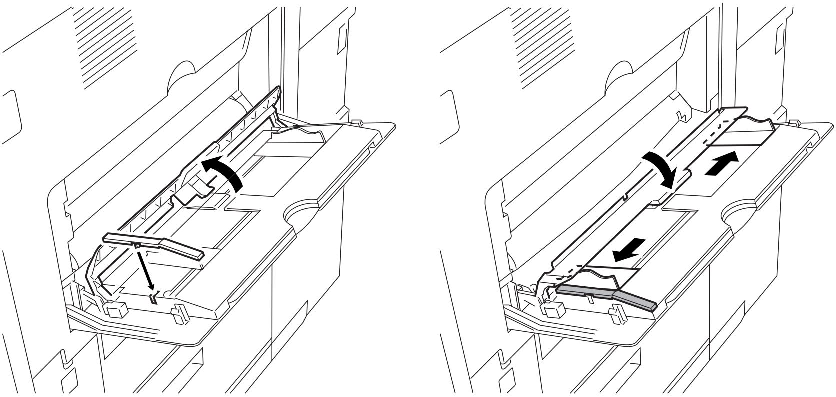
13.3.3.1.2 Skew in Manually Fed Paper

<Cause>

This symptom tends to occur when the side guide plate is not set to the correct position of the size of paper in use.

<Field Remedy>

If the user is not using paper larger than A3 (i.e., 305x457, 320x450), attach an MP side guide stopper (FC5-0530; available as a separate remedy) to the machine.



F-13-20

13.3.3.2 Fold/Rip

13.3.3.2.1 Peeling of a Manually Fed Label Sheet

<Cause>

The glue used on the label sheet stuck to a metal area of the manual feed separation pad.

<Field Remedy>

Clean the metal area of the manual feed separation pad to remove the glue.

13.3.4 Malfunction

13.3.4.1 No Power

13.3.4.1.1 iRC3100 does not start up, Progress bar on start-up window stops at three-quarters point

[Case in the field]

< Field Remedy >

n the field, this symptom occurred because the HDD was faulty (1 case). If the progress bar stops at the three-quarters point, it is possible that a writing error into the HDD could have occurred or the SRAM Board PCB Ass'y could have failed.
Follow the steps below:
1. Make sure that the BootROM, SDRAM and connectors on the Main Controller PCB are securely fitted or there is no pinched cable. If the symptom still recurs, go to the Step 2.
2. Turn the power OFF and then ON while pressing the numeric keys 1+9 simultaneously. The recovery program will automatically start and the LCD on the control panel will be shut off (blackened). When the LCD comes on, turn the power OFF/ON. If the host machine starts up normally, reinstall the system software (SYSTEM, LANG, RUI). If the symptom still recurs, go to the Step 3.
3. Start up the host machine in SafeMode (turn the power ON while pressing 2+8 keys) and execute HDD format (ALL) and download the system software (SYSTEM, LANG, RUI) by using SST, and then turn the power OFF/ON. If the symptom still recurs, go to the Step 4.
4. Replace the HDD with a new one and start up the host machine in SafeMode (turn the power ON while pressing 2+8 keys) and execute HDD format (ALL) and download the system software (SYSTEM, LANG, RUI) by using SST, and then turn the power OFF/ON. If the symptom still recurs, go to the Step 5.
5. Replace the SRAM Board PCB with a new one.
HDD: WM2-5188
SRAM Board PCB Ass'y: FG3-3225
Note: After replacement of the HDD, be sure to follow the instructions described in [12.6.5 After Replacing the HDD].

13.3.4.1.2 iRC3100 does not start up from sleep state

[Case in the field]

< Field Remedy >

The following describes the suspect cause and their temporary solutions:
a. If the host machine can recover by pressing the control panel switch; however, printing cannot be done in the sleep state.
It is possible that the Network board PCB (NIC) or the UFR board PCB is not securely

fitted.

1. Remove and reinstall both PCBs. If the symptom still recurs, go to the Step 2.
2. Replace either of the Network board PCB (NIC) or the UFR board PCB with a new one.

Network Board PCB: FG3-3135

UFR Board PCB: FG3-3223

b. If the host machine can recover by tuning the power ON.

As a temporary solution, change the energy consumption in sleep mode to [High]. In user mode [Common Settings> Energy Consumption in Sleep Mode> High].

c. If the host machine can recover by turning the power OFF/ON several times.

It is possible that BootROM or SDRAM is not securely fitted. Remove and reinsert them.

13.3.4.1.3 LCD on control panel does not come on (start up) for about 10 seconds when host machine recovers from sleep state

[Manual-related]

Description

This is a specification constraint of this product. The LCD on the control panel does not come on for about 10 seconds until the HDD starts up following a press of the control panel switch.

13.3.4.1.4 iRC3100 does not start up: Power is unintentionally shut off after progress bar on start-up window completes and thereafter iRC3100 never start up

[Inspected by Canon Inc.]

Cause

As a result of inspection, it was found that this symptom occurred because the front cover open sensor (PS22) was damaged, causing 5V line to be short-circuited. The suspect cause of the sensor breakage is that an excessive force could have been applied to the front cover during transportation.

Field Remedy

Inspect the front cover open sensor (FH7-7312). Replace it with a new one if it is damaged.

13.3.4.1.5 iRC3100 does not recover from sleep state; although energy consumption in sleep mode has been set to [High]

[Inspected by Canon Inc.]

Field Remedy

As a result of inspection, it was found that the DDI-S serial cable that connects the printer unit and the reader unit of the host machine was faulty. So, replace it with a new one.
DDI-S serial cable: FH2-7036

13.3.4.2 Control Panel-Related

13.3.4.2.1 Cassette Feeding Unit-Y1: Not recognized by iRC3100

[Case in the field]

< Field Remedy >

In the field, this symptom occurred because the connector at J319 on the DC Controller PCB was not securely fitted.
Make sure that the connector at J319 and the lattice connector for the Cassette Feeding Unit-Y1 (back side of iRC3100) are securely fitted or there is no pinched cable.

13.3.4.2.2 LCD does not come on although main power indicator on control panel lights up

[Inspected by Canon Inc.]

< Field Remedy >

As a result of inspection, the following were found:

- SDRAM512MB at J1107 on the Main Controller PCB was not securely fitted: 1 case
- Main Controller PCB (Main) was faulty: 1 case

Follow the steps below:

1. Check whether the connectors on the Main Controller PCB are securely fitted or there is no pinched cable, and whether BootROM and SDRAM are securely fitted. Try unplugging and reinserting them. If the symptom still recurs, go to the Step .2
2. Replace the Main Controller PCB (Main) with a new one.
Main Controller PCB Ass'y (Main): FG3-3221

13.3.4.2.3 DADF-L1: Original size detection failure / How to adjust tray width of DADF-L1

[Case in the field]

Cause

In the field, this symptom occurred because the adjustment of the tray width had not been executed upon installation of DADF-L1.

Field Remedy

Execute the tray width adjustment (either of a or b).

a. For AB
1. In service mode [FEEDER> Function> TRY-A4], set the tray side guide at the A4/A3 position and press OK to store the A4 width.
2. In service mode [FEEDER> Function> TRY-A5R], set the tray side guide at the A5R position and press OK to store the A5R width.
3. Clear service mode and turn the power OFF/ON.

b. For INCH
1. In service mode [FEEDER> Function> TRY-LTR], set the tray side guide at the LTR/11x17 position and press OK to store the LTR width.
2. In service mode [FEEDER> Function> TRY-LTRR], set the tray side guide at the STMT/LTRR/LGL position and press OK to store the LTRR width.
3. Clear service mode and turn the power OFF/ON.

Note: When installing DADF-L1 as an option, be sure to execute all of the following adjustments by referring to the DADF-L1 Service Manual [Chapter 3 Unpacking and Installation > Making Adjustments].

- Adjusting the Height
- Adjusting the Tray Height
- Adjusting the Read Position
- Adjusting the Magnification
- Adjusting the Horizontal Registration

- Adjusting the Trailing Edge Registration
- Adjusting the White Level

13.3.4.2.4 Power lamp light up but LCD on control panel does not: Because BootROM is not securely fitted

[Inspected by Canon Inc.]

Field Remedy

As a result of inspection, it was found that the BootROM was not securely fitted. So, remove and insert the BootROM once again.

13.3.4.3 Malfunction/Faulty Detection

13.3.4.3.1 Cassette Feeding Unit-Y1: Paper lifting plate does not ascend upon installation

[Case in the field]

< Field Remedy >

In the field, this symptom occurred because the connector of J723 on the Pedestal Driver PCB was not securely fitted. So, check this connector.

13.3.4.3.2 Finisher-P1: Not operate upon installation

[Case in the field]

< Field Remedy >

In the field, this symptom occurred because the DIPSWs 2 and 6 on the Finisher Controller PCB have been set at [ON] since factory shipment.

Make sure that all of the DIPSWs on the Finisher Controller PCB are set at [OFF] when this symptom occurs.

13.3.4.3.3 Paper size detection failure at Cassette 2

[Case in the field]

< Field Remedy >

In the field, this symptom occurred because the DC Controller PCB was faulty. Follow the steps below:

1. Make sure that the connectors at J321 on the DC Controller PCB and at the Cassette 2 Size Sensor PCB are securely fitted and that there is no pinched cable.
2. Swap the Cassette 2 Size Sensor PCB with the Cassette 1 Size Sensor PCB.

- If the symptom keeps occurring at the Cassette 2, the DC Controller PCB is likely to be faulty.
- If the symptom occurs at the Cassette 1, the Cassette 2 Size Sensor PCB is likely to be faulty.

Cassette Size Sensor PCB Ass'y: FG3-2798
DC Controller PCB Ass'y: FG3-2795

13.3.4.3.4 DADF-L1: Message [Original scanning area is dirty.] / How to adjust white level

[Case in the field]

Cause

In the field, the message [Original scanning area is dirty.] was displayed because the adjustment of the white level had not been executed upon installation of DADF-L1.

Field Remedy

Follow the steps below (adjusting the white level):

First of all, clean the reading glass and the platen roller.

1. Place a sheet of paper on the copyboard glass and close the DADF. In service mode [COPIER> Function> CCD> DF-MLVL1], press OK (OK will be displayed when the adjustment has been completed.)
2. Remove the paper and place it on the DADF tray. In service mode [COPIER> Function> CCD> DF-MLVL2], press OK (OK will be displayed when the adjustment has been completed.)

If this symptom still recurs, decrement the set value in service mode [COPIER> Option>

BODY> DFDST-L1/DFDST-L2] by 5 so as to optimize the dust detection level.

Note: When installing DADF-L1 as an option, be sure to execute all of the following adjustments by referring to the DADF-L1 Service Manual [Chapter 3 Unpacking and Installation > Making Adjustments].

- Adjusting the Height
- Adjusting the Tray Height
- Adjusting the Read Position
- Adjusting the Magnification
- Adjusting the Horizontal Registration
- Adjusting the Trailing Edge Registration
- Adjusting the White Level

13.3.4.3.5 DADF-L1: Auto orientation feature does not work upon installation

[Case in the field]

Cause

In the field, this symptom occurred because the adjustment of DADF-L1 had not been executed upon its installation.

Field Remedy

When DADF-L1 is installed as an option, it is necessary to execute all the following adjustments by referring to the DADF-L1 Service Manual [Chapter 3 Unpacking and Installation > Making Adjustments].

- Adjusting the Height
- Adjusting the Tray Height
- Adjusting the Read Position
- Adjusting the Magnification
- Adjusting the Horizontal Registration
- Adjusting the Trailing Edge Registration
- Adjusting the White Level

13.3.4.3.6 DADF-L1: Paper pick-up roller does not ascend because shaft of registration sensor lever comes off

[Inspected by Canon Inc.]

Cause

As a result of inspection, it was found that this symptom occurred because the shaft of the registration sensor lever in DADF-L1 came off.

Field Remedy

Open the feeder cover and inspect the registration sensor lever above the registration roller to make sure that the shaft is securely fitted.

13.3.4.3.7 iRC3100 displays message prompting to confirm size guide position although designated size of paper is placed on stack bypass

[Case in the field]

Field Remedy

Register the paper width for the stack bypass in service mode as follows:

1. Select in service mode [COPIER> Function> CST].
2. Place A4R paper on the stack bypass, and adjust the size guide to A4R width. Press [MF-A4R] to highlight and press the OK key so that the value will be stored after auto adjustment.
3. Likewise, repeat the step 2 for A6R and A4.

13.3.4.4 Noise

13.3.4.4.1 Cassette Feeding Unit-Y1: Abnormal noise from drive unit

[Inspected by Canon Inc.]

< Field Remedy >

As a result of inspection, abnormal noise occurred somewhere between the gear of the cassette paper pick-up motor and the driving gear (80T/16T gear) inside the drive unit

because the attachment position of the motor was not proper (1 case).
Make sure the motor is in proper alignment with the drive gear when this symptom occurs.
Drive Ass'y: FM2-0147

13.3.4.4.2 Noise at Time of Pickup from the Cassette

<Cause>
The symptom (i.e., noise) occurs when multiple sheets are moved to the feed roller or the separation roller, causing the separation roller assembly to vibrate.
<Field Remedy>
Use a sponge retard roller (FB5-0873; available as a separate remedy).

13.3.4.5 User Warning Message

13.3.4.5.1 Message [Check the network connection.] / Message [Check the TCP/IP.]

[Case in the field]
< Field Remedy >
If the host machine is not connected to network, follow the steps below:
Change the service mode setting so as not to display the network error messages.
In service mode (LEVEL 2) [COPIER> Option> BODY> NWERR-SW], change the set value from [1] to [0], and then turn the control panel switch off and turn the main power switch OFF/ON.
0: not display
1: display (value at time of factory shipment/value after RAM clear)

13.3.4.5.2 Once arbitrary paper is registered in user mode [Common Settings> Stack Bypass Standard Settings], paper of different paper sizes cannot be copied from stack bypass

[Manual-related]

< Field Remedy >

This is a specification constraint of this product. Explain to the customer that if they want to use paper of several sizes from the stack bypass [Stack Bypass Standard Settings] should be set at [OFF].

13.3.4.5.3 #853 User Error Code during printing

[Manual-related]

Cause

If the host machine stops printing because of no paper or no toner remaining, or if the speed of data input is faster than the one of data processing (e.g. a large volume of print job is sent to the host machine), the area of spooling on network will become full and communication clogging occur. As a result, a timeout occurs on the computer and #853 is displayed without a completion of the job.

Field Remedy

1. Make sure that the host machine does not stop for any reasons such as no paper or no toner.
2. Enable network spooling function in user mode [System Settings> Network Settings> Use Spooler> On] so that it will become faster to release the computer that sends the job from network environment.

13.3.4.5.4 Message 'The file attachment cannot be processed by Internet Fax. No programs can process the file attachment.' is printed out with text of received I-Fax

[Manual-related]

Field Remedy

This symptom can occur when the files (images) that are attached to received I-fax documents are not compatible with this machine. In that case, the machine does not process (print, forward, or store) these files, but erases them instead. The names of the erased files and the message above is printed out with the text of the received I-fax.

For your information, iRC3100 I-Fax can support only TIFF format (MH, MR, MMR).

13.3.4.5.5 When attempting to access iRC3100 via Remote UI, message 'User information is invalid' is displayed

[Case in the field]

Field Remedy

It is impossible that the above message will be displayed when the privacy preference setting is set to 'High'. Try changing the privacy preference setting to 'Medium'.
In the Internet Explorer's case, click [Tool]> [Internet Option]> [Privacy].

13.3.4.5.6 The machine frequently indicates the message "Clean DF Reading Glass."

<Cause 1>

The reading glass is soiled with dust or dirt. (The reader detects the presence of dust on the glass, but does not detects stray dust.)

<Field Remedy 1>

Clean the reading glass using cleaning tissue/cleaning oil.

<Cause 2>

The read roller is soiled. The white sheet film is soiled with dust.

<Field Remedy 2>

Dry wipe the white sheet/ read roller. (Or, alcohol may be used.)

MEMO

If the machine is installed in an area subject to dust, it is a good idea to periodically perform cleaning.

<Cause 3>

The reading glass has scratches or dirt that cannot be removed by cleaning.

<Field Remedy 3>

Replace the reading glass.

<Cause 4>

The read roller has scratches in radial direction, or has dirt that cannot be removed by cleaning.

<Field Remedy 4>

Replace the read roller.

MEMO

When you have replaced the read roller, be sure to perform the following:
- while level adjustment
- DF height adjustment
- read position adjustment

<Cause 5>

The CIS has soiled pixel cells.

<Checking the CIS for Soiled Pixel Cells>

Make a copy in copyboard mode. The presence of a soiled pixel cell will cause a line in the image.

<Field Remedy 5>

Replace the CIS.

13.3.4.5.7 The machine frequently indicates the message "Clean reading Glass." (The user wants to disable it.)

Since the message is not serious (not triggered by soiling inside the machine), the user may want to disable it.

<Cause 1>

Change the setting (level 2) of the machine's dust detection mechanism.

<Field Remedy 1>

Make the following selections in service mode, and decrease the level: COPIER>OPTION>BODY>DFDST-L2. The setting will decrease in units of '5'.

MEMO

A lower setting will decrease the dust correction level, thus possibly leaving light black lines in the images. Setting the level to '0' will disable the dust detection mechanism all together.

<Cause 2>

The user wants to disable the cleaning message.

<Field Remedy 2>

Make the following selections, and turn it off so as to disable the cleaning message: Additional Function>Common Settings>Cleaning Display for Original Scanning Area.

MEMO

The reader unit executes dust detection even after the cleaning message has been disabled, changing the read position as needed depending on the result of detention.

13.3.4.6 Other Defect

13.3.4.6.1 Key Switch Unit-A1: Key not recognized upon installation

[Manual-related]

< Field Remedy >

When installing the Key Switch Unit-A1, the following setting change is required. Follow the steps below:

In service mode [COPIER> Install> KEY], type [1], shut off the control panel switch and turn the power OFF/ON.

13.3.5 Printing/scanning

13.3.5.1 No Output

13.3.5.1.1 2nd page and later are not output or abnormal image is output when attempting to print multiple sheets of huge data from computer

[Inspected by Canon Inc.]

< Field Remedy >

As a result of inspection, there are two cases where the SDRAM512MB on the Main Controller PCB was faulty.

Unplug and insert the SDRAM512MB at J1107 on the Main Controller PCB. If the symptom still recurs, replace the SDRAM512MB with a new one.

SDRAM512MB: WA7-2326

13.3.5.1.2 #852 User Error Code

[Case in the field]

< Description >

#852 indicates a state that the main power switch was turned OFF while a job was being processed.

< Field Remedy >

If this error code is displayed in other cases than the above, check the user mode setting as described below because the setting change corrected the symptom in the field: User mode [Common Settings> Entergy Consumption in Sleep Mode> High].

13.3.5.2 Installation Failure

13.3.5.2.1 Can Send Kit for iRC3200 be used with iRC3100?

[Case in the field]

Description

No, it cannot be used. The Send Kit varies among models. When installing the sending feature into iRC3100, be sure to use Color Send Kit-C1.

13.3.5.3 Faulty Printing/Scanning Result

13.3.5.3.1 Message [Waiting to print …] keeps appearing at UFR printing / Half of image becomes solid black

[Case in the field]

< Field Remedy >

In the field, this symptom occurred because the UFR Board PCB was faulty. If this kind of abnormal image occurs on prints from a computer, not on copies or PG test prints, the UFR Board PCB is likely to be faulty.

Follow the steps below:

1. Remove and reinsert the UFR Board PCB to make sure of its connection.
2. If the symptom still recurs, replace the UFR Board PCB with a new one.

UFR Board PCB Ass'y: FG3-3223

13.3.5.3.2 Image sent to computer in PDF format (Compact, 300dpi) is scaled down when printing

[Case in the field]

Cause

When printing a PDF file using Acrobat, the image will be shrunk if a check mark is placed on [Shrink oversized pages to paper size].

Field Remedy

Clear the check mark on [Shrink oversized pages to paper size] when printing.

13.3.5.3.3 Print settings made in printer driver were not effective when printing multiple sheets of MS Excel data

[Case in the field]

Field Remedy

In order to print multiple sheets of MS Excel data with some special features (e.g. duplex mode, specifying a particular paper source), it is necessary to make those settings for every sheet. Before printing, make the appropriate settings in [Properties] of the printer driver for every sheet.

13.3.6 Network

13.3.6.1 Start-Up Failure

13.3.6.1.1 Utility software (e.g. Network ScanGear) cannot be used, no problem with other functions

[Inspected by Canon Inc.]

Description

It is possible that [SNMP Settings] and [Enable Dedicated Port] are set to 'Off'. If so, change them to 'On'.

In user mode [System Settings> Network Settings> SNMP Settings> On

In user mode [System Settings> Network Settings> Enable Dedicated Port> On

[SNMP Settings]: If you want to set or browse each item of the machine with utility software that uses SNMP to obtain information, set it to 'On'.

[Enable Dedicated Port]: If you want to set or browse detailed information on the machine with a Canon printer driver or utility software, set it to 'On'.

13.3.7 Transmission/Fax-Related

13.3.7.1 Transmission Problem

13.3.7.1.1 One-sheet original is output in two sheets at receiving side

[Case in the field]

Field Remedy

Make the sender information smaller or change the printing position of the transmission terminal ID.

a. How to make sender information smaller

In service mode [FAX> NCU> SPECIAL-B> SW28], change bit6 to [1].

b. How to change TX transmission terminal ID position

In user mode [Communications Settings> Common Settings> TX Settings> TX Terminal ID> On> Option> Printing Position], select [Inside].

13.3.7.2 Reception Problem

13.3.7.2.1 iR C3100 cannot receive FAX while it is in sleep state

[Case in the field]

Field Remedy

In the field, this symptom was corrected by changing the setting of the energy consumption in sleep mode to [High].

How to set: In user mode [Common Settings> Energy Consumption in Sleep Mode> High]

13.3.7.2.2 DADF-L1: Image at receiving side is partially missing at FAX transmission

[Case in the field]

Cause

In the field, this symptom occurred because the adjustment of the tray width had not been executed upon installation of DADF-L1.

Field Remedy

Execute the tray width adjustment (either of a or b).

a. For AB

1. In service mode [FEEDER> Function> TRY-A4], set the tray side guide at the A4/A3

position and press OK to store the A4 width.

2. In service mode [FEEDER> Function> TRY-A5R], set the tray side guide at the A5R position and press OK to store the A5R width.

3. Clear service mode and turn the power OFF/ON.

b. For INCH

1. In service mode [FEEDER> Function> TRY-LTR], set the tray side guide at the LTR/ 11x17 position and press OK to store the LTR width.

2. In service mode [FEEDER> Function> TRY-LTRR], set the tray side guide at the STMT/LTRR/LGL position and press OK to store the LTRR width.

3. Clear service mode and turn the power OFF/ON.

Note: When installing DADF-L1 as an option, be sure to execute all of the following adjustments by referring to the DADF-L1 Service Manual [Chapter 3 Unpacking and Installation > Making Adjustments].

- Adjusting the Height
- Adjusting the Tray Height
- Adjusting the Read Position
- Adjusting the Magnification
- Adjusting the Horizontal Registration
- Adjusting the Trailing Edge Registration
- Adjusting the White Level

13.3.7.3 Other Operational Defect

13.3.7.3.1 #899 User Error Code: After e-mail or I-Fax transmission

[Manual-related]

Field Remedy

#899 can be displayed when the e-mail or I-Fax has been successfully sent; however, it is unknown whether or not reception has been complete because transmission was relayed via multiple servers.

13.3.8 Jam (Main Unit)

13.3.8.1 010C JAM CODE: 2nd side of duplex print is jammed because of duplex inlet sensor coming off

[Case in the field]

Description

010C: Delay jam at duplex inlet sensor PS3A (3rd Delivery Frame Ass'y)

Cause

In the field, this symptom occurred because the duplex inlet sensor came off.

Field Remedy

Make sure that the duplex inlet sensor at the duplex inlet guide unit does not come off. If it comes off, reinstall it securely.

Duplex Inlet Sensor: FH7-7312

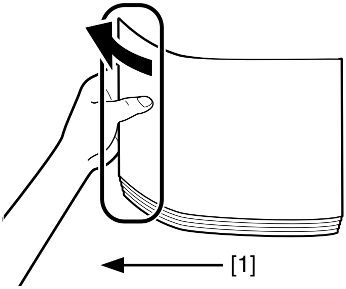
13.3.8.2 Jam Immediately After Pickup (heavy paper, envelope, postcard)

<Cause>

The heavy paper, envelope, or postcard was not given curling before it was set in the manual feed tray.

<Field Remedy>

Give heavy paper, envelope, or postcard curling of about 3 mm before placing it in the manual feed tray as shown.



F-13-21

[1] Direction of paper feed

Memo:

The remedy herein is indicated in the User's Manual for use by the user. If a similar jam recurs, advise the user to refer to the User's Manual (i.e., to curl the edge of the paper).

13.3.8.3 0A0B JAM CODE occurred upon installation of Inner 2way Tray-C1

[Case in the field]

Description

0A0B: Stationary jam at the No. 3 delivery sensor PS5A (3rd Delivery Frame Ass'y)

Field Remedy

In the field, this symptom occurred because the spring of the No. 3 delivery sensor lever came off (1 case). So, inspect the spring.

Torsion Spring: FC5-1011

13.3.8.4 0D91 JAM CODE: Occurred at all cassettes upon installation

[Inspected by Canon Inc.]

< Field Remedy >

As a result of inspection, it was found that this symptom occurred because the spring of the pre-registration sensor (PS9) flag was deviated from the hook portion (1 case).
Generally speaking, the 0D91 jam code can be displayed when the paper size is wrongly designated (paper in shorter length than designated is delivered).
If the paper jam occurs at all the cassettes, check whether there are any abnormalities on the sensor (PS9), the sensor flag and its spring.

13.3.8.5 Pickup Faults (pickup from the side paper deck)

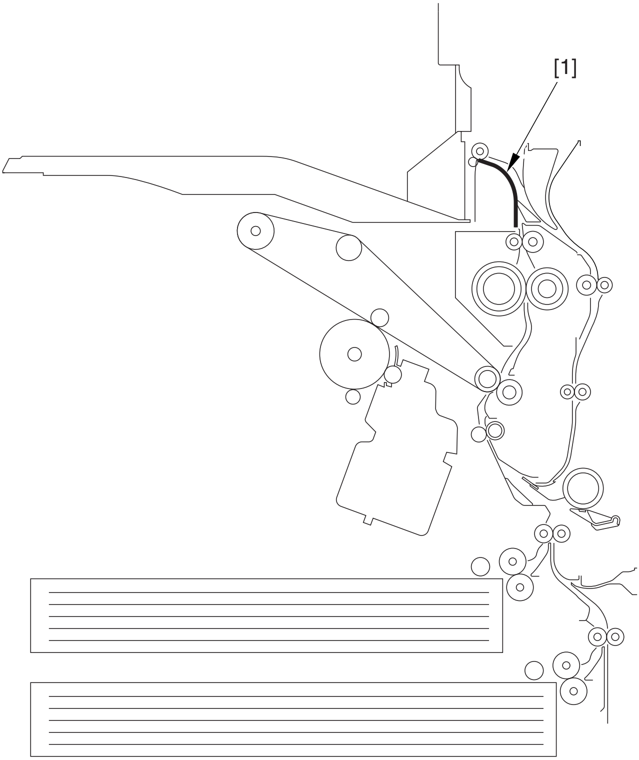
<Note>
This symptom tends to occur when the deck adjuster is not correctly adjusted at time of installation.
<Cause>
The point of paper passage from the paper deck to the machine is too low, adversely affecting the latching to the machine; the resulting low pressure of the pull-off roller causes pickup faults.
<Field Remedy>
Turn the adjuster found on the bottom of the paper deck to adjust the height of the deck.
<Remarks>
If the adjuster is not adjusted correctly at time of installation, the following symptoms can also occur in addition to jams:

1. the release lever movement tends to be heavy.
2. the door tends to close more tightly at the rear than at the front.
3. the deck may not easily settle in place.

13.3.8.6 Delivery Delay Jam (label sheet)

<Cause>
The glue used on the delivered label sheet stuck on the rib found where the feed path curves immediately in front of the delivery roller. The glue used on the label sheet that follows joined the glue left by the preceding sheet, thus turning into a delivery delay jam.
<Field Remedy>

Clean the delivery path [1] to remove the glue left behind the label sheets.



F-13-22

13.3.8.7 Pickup Stationary Jam

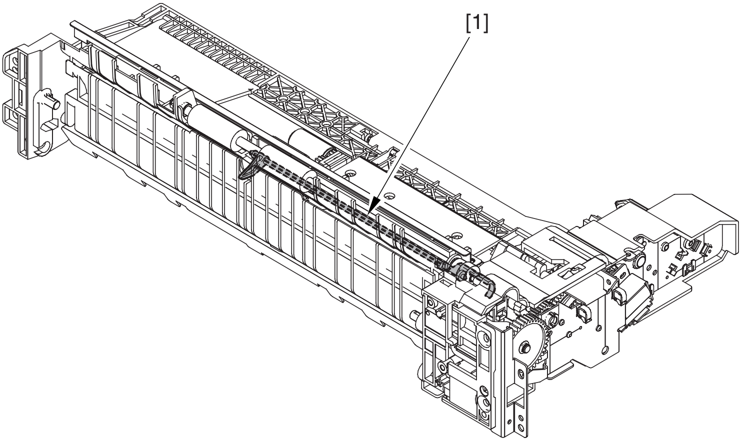
<Cause>

Paper moving past leaves lint behind it, which tends to collect around the sensor flag. The build-up of lint soon starts to hinder the movement of the sensor flag, at times preventing it from returning to its initial position.

<Field Remedy>

1) Remove the pickup unit in question.

2) Clean the area around the sensor flag [1] using a blower brush or the like to remove the paper lint.



F-13-23

3) Put the pickup unit back into place.

13.3.9 Error Code

13.3.9.1 E004-0001 Error Code: Displayed after opening/closing front panel

[Case in the field]

< Field Remedy >

In the field, this symptom occurred for the following reasons (3 cases):

During transportation, the front panel was held with an excessive force. As a result, the front panel actuator interfered with and detached the front panel sensor (PS22). The sensor came in contact with the sensor mount causing 5V line to be short-circuited.

If the front panel sensor is damaged, replace it with a new one. At that time, visually inspect the front panel actuator to make sure that it does not interfere with the sensor.

Front Panel Sensor (PS22): FH7-7312

13.3.9.2 E020 Error Code: Occurred upon installation because developer failed to be filled inside developing ass'y

[Case in the field]

< Field Remedy >

In the field, this symptom occurred upon installation because a developing ass'y without developer being filled had been wrongly enclosed in the package.
If this occurs, replace the affected developing ass'y:
Developing Ass'y (BLACK): FM2-0056
Developing Ass'y (YELLOW): FM2-0057
Developing Ass'y (MAGENTA): FM2-0058
Developing Ass'y (CYAN): FM2-0059

13.3.9.3 E020 Error Code and Toner scattering inside machine: Because wrong screw is used for fixing developing ass'y

[Inspected by Canon Inc.]

Description

E020 indicates that the drum or the developer-related errors occur.

Cause

As a result of inspection, this symptom occurred because of the following fact. When the developing ass'y is fixed inside the developing rotary, a TP screw was wrongly used although the designated stepped screw should have been used. Consequently, a clearance became wider between the developing cylinder and the drum at a time of developing.

Field Remedy

Make sure that the developing ass'y is fixed with the designated stepped screw. In addition, move the developing ass'y with your hand to make sure that there is approximately 1.5 to 2.0mm-clearance in all directions.
Stepped Screw: FS1-9003

13.3.9.4 E021-000x Error Code: Developing rotary does not rotate and abnormal noise comes from motor

[Inspected by Canon Inc.]

Description

E021 can be displayed when an error occurs in the developing rotary. The detail codes are:

0001: The developing rotary home position cannot be detected.

0002: The intervals of flag detection during rotation is too short or long.

0003: The sensor does not detect the flag when the developing rotary stops at development point.

Cause

As a result of inspection, it was found that the DC Controller PCB was unable to control the motor because it was faulty (1 case).

Field Remedy

1. Check whether or not the developing rotary receives any physical load.

Rotate the developing rotary in a counterclockwise direction by hand to see whether it rotates smoothly. If any abnormality is found, eliminate the root cause. No problem is found, go to the Step 2.

2. Make sure that the connectors are securely fitted between J313 on the DC Controller PCB and the Rotary Motor (M8) or there is no pinched wire. No problem is found, go to the Step 3.

3. Replace the DC Controller PCB with a new one. If the symptom still recurs, go to the Step 4.

4. Replace the Rotary Motor with a new one.

DC Controller PCB: FG3-2795

Rotary Motor: FM2-0080

13.3.9.5 E021-0003 Error Code: Occurs during copy, not upon FAX reception but output becomes yellow

[Case in the field]

Description

E021-0003 can be displayed when the rotary HP sensor cannot detect the developing position detecting sensor flag although the developing rotary stops at development point.

Cause

In the field, this symptom occurred because of breakage of the developing position detecting sensor flag that is located on the rear rotary flange.

Field Remedy

Visually inspect the rear rotary flange to see whether or not the developing position detecting sensor flag is broken.
Rear Rotary Flange: FC5-0299

13.3.9.6 E026-0x01 Error Code / Message [Remaining toner is low.] / Toner scattering inside machine

[Case in the field]

Description

E026-0x01 can be displayed when the toner concentration does not return to a normal level after replacement of the toner bottle and 5-time toner recovery sessions following the detection of toner absence.

Cause

In the field, this symptom occurred because the toner shutter in the developing ass'y was not open completely and the toner was not supplied from the toner bottle to the developing ass'y.

Field Remedy

Before installing the developing ass'y into the host machine, be sure to slide and fix the toner shutter so as to cover the opening for toner. Then, install the toner bottle.

13.3.9.7 E067-0100 Error Code: Because tension spring for Primary Transfer Roller comes off

[Case in the field]

Description

E067-0100 can be displayed when the value of the primary transfer output current measures abnormal two straight times.

Field Remedy

In the field, this symptom occurred because the tension spring for the primary transfer roller shaft in the ITB came off. So, make sure that the spring is securely installed.

13.3.9.8 E070-0003 Error Code: Improper ground of ITB tension roller shaft in ITB unit

[Inspected by Canon Inc.]

Cause

As a result of inspection, it was found that the grounding plate did not come in contact with the shaft of the ITB drive roller in the ITB unit, causing a poor ground (1 case). This grounding plate is used to establish a ground for the ITB tension roller to the ITB drive roller.

E070-0003 can be displayed when the time that passes between the first detection of the ITB home position (HP) and the next HP detection is shorter than a specific period of time.

Field Remedy

Follow the steps below:

1. Make sure that the inner surface of the ITB has stains or scratches on it.
2. Make sure that the ITB-HP sensor (PS19) operates normally.
3. Make sure that the grounding plate properly comes in contact with the shaft of the ITB drive roller.

Grounding Plate: FC5-0715
ITB-HP Sensor (PS19): FH7-7630

13.3.9.9 E070-0003 Error Code: Because ITB-HP sensor (PS19) is soiled

[Case in the field]

Description

E070-0003 can be displayed when the time from the first detection of the ITB home position to the next detection is shorter than a specific period of time.

Field Remedy

In the field, this symptom occurred because the ITB-HP sensor (PS19) was soiled. So, remove the ITB and clean the sensor with a blower brush.

13.3.9.10 E100 / E110 Error Code: Occurred because J328 connector on DC Controller PCB was not securely fitted

[Inspected by Canon Inc.]

Description

E100 is a BD error and E110 is a fault of the laser scanner motor operation.

Field Remedy

As a result of inspection, it was found that the connector at J328 on the DC Controller PCB was not securely fitted (1 case). Check whether the connectors are securely fitted between the laser scanner unit and the DC Controller PCB (J327, J328, J329), and whether there is no pinched cable.

13.3.9.11 E110 Error Code: Error occurred at the time when paper was delivered to transfer unit

[Case in the field]

< Description >

E110 can be displayed when a fault of the laser scanner motor operation occurs.

< Field Remedy >

In the field, it was found that the laser scanner unit was faulty (1 case).
Check whether the connectors are securely fitted between the laser scanner unit and the DC Controller PCB (J327, J328, J329) or whether there is no pinched cable. If no problem is found, replace the Laser Scanner unit with a new one.
Laser Scanner Ass'y: FM2-0041

13.3.9.12 E225-0001 Error Code: Scanning lamp came on

[Case in the field]

Description

E225-0001 indicates a CIS light intensity error occurs and can be displayed when the machine cannot find out whether the lamp has come on normally during shading correction at time of power-on or at the start of a job.

Cause

In the field, this symptom occurred because the Contact Image Sensor (CIS) Ass'y was faulty.

Field Remedy

1. Make sure that the connectors are securely fitted between the CIS Ass'y - CIS Inverter PCB - Reader Controller PCB, and that there is no pinched cable. If no problem is found, go to the Step 2.
2. Replace the CIS Ass'y with a new one.

Contact Image Sensor Ass'y: FM2-1563
CIS Inverter PCB: FH3-7215
Reader Controller PCB: FG3-3159

13.3.9.13 E315-0010/0034/0038 Error Code: Occurred during PCFAX transmission, then host machine rebooted

[Case in the field]

< Field Remedy >

In the field, this symptom occurred because the Resolution Switch PCB was faulty (1 case).

E315 can be displayed when the image data failure has occurred (The Resolution Switch PCB is faulty, the image memory (SDRAM) and HDD are faulty or not securely fitted.)

Make sure that the connectors on the Main Controller PCB are securely fitted or there is no pinched cables. If no problem is found, replace the Resolution Switch PCB with a new one.

Resolution Switch PCB: FG3-2728

13.3.9.14 E351-0000 Error Code: Occasionally occurs while host machine is being energized

[Inspected by Canon Inc.]

Description

E351 can be displayed when an Main Controller PCB (Sub) error occurs.

Cause

As a result of inspection, it was found that this symptom occurred because the Main Controller PCB (Sub) was faulty.

Field Remedy

1. Make sure that the connectors are securely fitted between J1207 on the Main Controller PCB (Main) and Main Controller PCB (Sub), and there is no pinched wire.
2. If this symptom recurs with a low frequency, it is possible that the Main Controller PCB (Sub) is faulty. So, replace it with a new one.

Main Controller PCB (Sub): FM2-0209

13.3.9.15 E400-0002 Error Code: Because ADF Controller PCB is faulty

[Case in the field]

Description

E400 can be displayed when a feeder communication error occurs. The detail code 0002 indicates a reception status error.

Cause

In the field, this symptom occurred because the ADF Controller PCB was faulty.

Field Remedy

Make sure that the connectors are securely fitted on the ADF Controller PCB, and between the ADF Controller PCB and the Main Controller PCB (Sub), and that there is no pinched wire. If no abnormality is found, replace the ADC Controller PCB with a new one.

ADF Controller PCB: FG3-3124
Main Controller PCB (Sub): FM2-0209

13.3.9.16 E500 (Finisher-P1)

<Cause 1>

- The harness is faulty.

<Field Remedy 1>

Check the connection between J2 of the finisher controller PCB and the DC controller PCB of the host machine.

<Cause 2>

- The finisher controller PCB is faulty, or the host machine has a fault.

<Field Remedy 2>

- Replace the finisher controller PCB, or replace the DC controller of the host machine.

13.3.9.17 E505 (Finisher-P1)

<Cause>

- The backup memory is inadequate.

<Field Remedy>

Initialize the RAM.
Replace the finisher controller PCB.

13.3.9.18 E514 (Finisher-P1)

<Cause 1>

- The stack delivery motor (M2) is faulty.

<Field Remedy 1>

- Replace the stack delivery motor (M2).

<Cause 2>

- The return belt escape HP sensor (SR5) is faulty.

<Field Remedy 2>

Replace the return belt escape HP sensor (SR5).

<Cause 3>

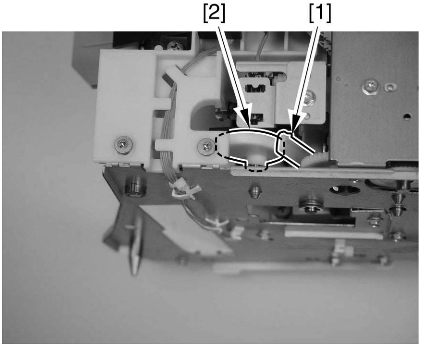
- The stack retaining roll drive mechanism is faulty.

<Field Remedy 3>

Correct the stack retaining roll drive mechanism.

EX:

Check to see that the drive cam [2] is under the belt arm [1].



F-13-24

<Cause 4>

- The finisher controller PCB is faulty.

<Field Remedy 4>

Initialize the RAM.

Replace the finisher controller PCB.

13.3.9.19 E530 (Finisher-P1)

<Cause 1>

- The rear alignment motor (M4) is faulty.

<Field Remedy 1>

Replace the rear alignment motor (M4).

<Cause 2>

- The rear alignment HP sensor (SR4) is faulty.

<Field Remedy 2>

Replace the rear alignment HP sensor (SR4).

<Cause 3>

- The finisher controller PCB is faulty.

<Field Remedy 3>

Initialize the RAM.
Replace the finisher controller PCB.

13.3.9.20 E531 (Finisher-P1)

<Cause 1>

- A staple has jammed.

<Field Remedy 1>

Remove the staple.

<Cause 2>

- The stapler motor (M9) is faulty.
- The stapler punching home position sensor (SR18) is faulty.

<Field Remedy 2>

- Replace the stapler.

<Cause 3>

- The finisher controller PCB is faulty.

<Field Remedy 3>

Initialize the RAM.
Replace the finisher controller PCB.

13.3.9.21 E532 (Finisher-P1)

<Cause 1>

- The stapler slide motor (M8) is faulty.

<Field Remedy 1>

Replace the stapler slide motor (M8).
Check the harness between the stapler slide motor (M8) and the finisher controller PCB.

<Cause 2>

- The stapler slide HP sensor (SR6) is faulty.

<Field Remedy 2>

Replace the stapler slide HP sensor (SR6).
Check the harness between the stapler slide HP sensor (SR76) and the finisher controller PCB.

<Cause 3>

- The stapler shift belt is faulty.

<Field Remedy 3>

Check the stapler shift belt.

<Cause 4>

- The finisher controller PCB is faulty.

<Field Remedy 4>

Initialize the RAM.
Replace the finisher controller PCB.

13.3.9.22 E535 (Finisher-P1)

<Cause 1>

- The swing cam motor (M5) is faulty.

<Field Remedy 1>

Replace the swing cam motor (M5).

<Cause 2>

- The swing cam HP sensor (SR7) is faulty.

<Field Remedy 2>

Replace the swing cam HP sensor (SR7).

<Cause 3>

- The stack delivery roller swing mechanism is faulty

<Field Remedy 3>

Replace the upper guide assembly.

Correct the stack delivery motor swing mechanism.

<Cause 4>

- The finisher controller PCB is faulty.

<Field Remedy 4>

Initialize the RAM.

Replace the finisher controller PCB.

13.3.9.23 E537 (Finisher-P1)

<Cause 1>

- The front alignment motor (M3) is faulty.

<Field Remedy 1>

Replace the font alignment motor (M3).

<Cause 2>

- The front alignment HP sensor (SR3) is faulty.

<Field Remedy 2>

Replace the front alignment HP sensor (SR3).

<Cause 3>

- The finisher controller PCB is faulty.

<Field Remedy 3>

Initialize the RAM.

Replace the finisher controller PCB.

13.3.9.24 E540 (Finisher-P1)

<Cause 1>

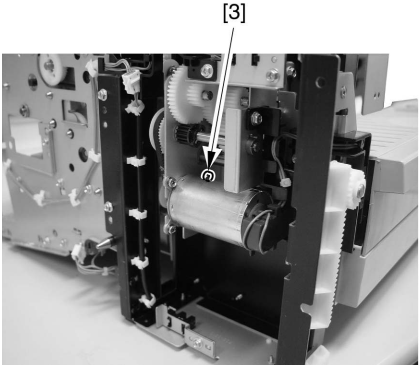
- The stack tray shift motor (M7) is faulty.

<Field Remedy 1>

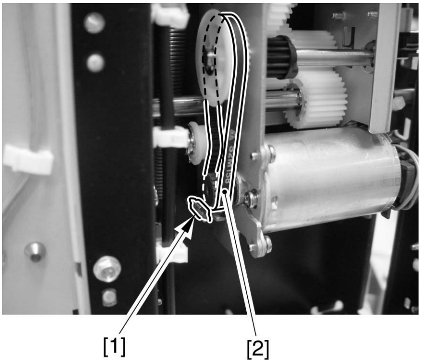
Replace the stack tray shift motor (M7).

Adjust the belt tension of the stack tray shift motor (M7).

⚠After mounting the motor back in place, loosen the screw [3] once and then tighten it. The spring [1] will automatically adjust the tension of the belt [2].



F-13-25



F-13-26

<Cause 2>

- The stack tray upper paper sensor (SR9) is faulty.
- The stack tray lower paper sensor (SR10) is faulty.
- The stack tray lower limit sensor (SR12) is faulty.
- The stack tray upper limit sensor (SR13) is faulty.

<Field Remedy 2>

Replace the individual sensors.

<Cause 3>

- The finisher controller PCB is faulty.

<Field Remedy 3>

Initialize the RAM.

Replace the finisher controller PCB.

13.3.9.25 E542 Error Code: Saddle Delivery Tray of Saddle Finisher-Q2 not completely latched

[Case in the field]

Description

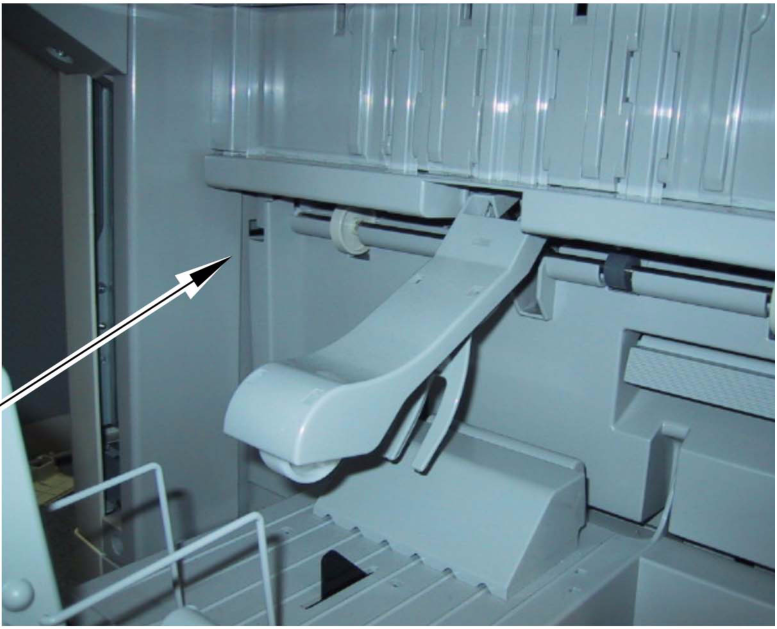
E542 can be displayed when the tray 2 shift motor (M38) is faulty.

Cause

In the field, this symptom occurred because the cover of the saddle delivery tray was not completely latched (rear side, specifically) as a result of opening/closing for jam clearance, causing the finisher tray to hit against the cover.

Field Remedy

Make sure that the cove of the saddle delivery tray is completely latched.



F-13-27

13.3.9.26 E577 (Finisher-P1)

<Cause 1>

- The paddle motor (M6) is faulty.

<Field Remedy 1>

Replace the paddle motor (M6).

<Cause 2>

- The paddle HP sensor (SRE8) is faulty.

<Field Remedy 2>

- Replace the paddle HP sensor (SR8).

<Cause 3>

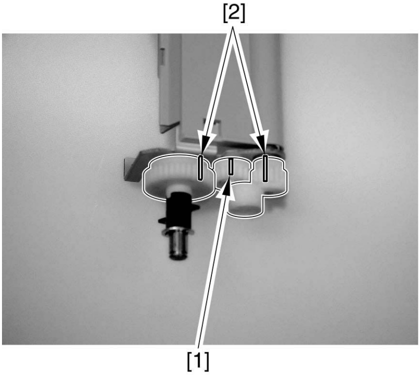
- The paddle and the stacking wall drive mechanism are faulty.

<Field Remedy 3>

Check the paddle and the stacking wall drive mechanism..

Check to see if the drive gear phase is correct.

⚠Be sure to mount the 3 gears so that the groove [1] of gear B fully engages with the extensions of gears A and B.



F-13-28

<Cause 4>

- The finisher controller PCB is faulty.

<Field Remedy 4>

Initialize the RAM.

Replace the finisher controller PCB.

13.3.9.27 E602-0001 Error Code: Ticktack sound is heard upon start-up and then the error code is displayed

[Case in the field]

n the field, it was found that the HDD was faulty.

E602-0001 can be displayed when the machine cannot recognize the HDD or cannot find BOOTDEV at start-up.

Follow the steps below (Described in the Service Manual [Chapter 14 Self Diagnosis > Error Code Details> E602 in detail]).

Field Remedy

1. Make sure that the 2 types of cables (for Power Supply and IDE) that come from the HDD are securely fitted. If the symptom still recurs, go to the Step 2.
2. Turn the power OFF and then ON while pressing the numeric keys 1+9 simultaneously. The recovery program will automatically start and the LCD on the control panel will be shut off (blackened). When the LCD comes on, turn the power OFF/ON.

- If the host machine starts up normally, reinstall the system software (SYSTEM, LANG, RUI).
- If the symptom still recurs, go to the Step 3.

3. Replace the HDD with a new one and start up the host machine in SafeMode (turn the power ON while pressing 2+8 keys). Format the HDD (ALL) and download the system software (SYSTEM, LANG, RUI) using the SST, and then turn the power OFF/ON. If the symptom still recurs, go to the Step 4.
4. Replace the Main Controller PCB (Main) with a new one.

HDD: WM2-5188

Main Controller PCB Ass'y (Main): FG3-3221

Note: After replacement of the HDD, be sure to follow the instructions described in the Service Manual [Chapter 12 Standards and Adjustments > Electrical Components > After Replacing the HDD].

13.3.9.28 E602-0202 Error Code: Recovered after HD-CLEAR

[Case in the field]

Field Remedy

E602-0202 can be displayed when no image data exists although it should be stored in [FSTDEV] (the image storage area in the HDD). This error is determined by the data held in the SRAM on the SRAM Board PCB Ass'y. So, the host machine will not recover by replacement of the HDD without initializing the SRAM. Executing [HD-CLEAR] in service mode will initialize the image storage area and update the data in the SRAM.

Consequently, when any E602-related error codes occur, do not replace the HDD first. Follow the instructions described in Service Manual [Chapter 14 Self Diagnosis > Error

Code Details > E602 in detail].

Outline of procedures

1. Partition check and recovery process

In service mode [COPIER> Function> SYSTEM> CHK-TYPE], enter [1]. Select [HD-CHECK] and press [OK]. Upon completion, turn the power OFF/ON.

- If the host machine recovers, download the system software (SYSTEM, LANG, RUI).
- If the symptom still recurs, go to the Step 2.

2. Partition initialization

In service mode [COPIER> Function> SYSTEM> CHK-TYPE], enter [1]. Select [HD-CLEAR] and press [OK]. Upon completion, turn the power OFF/ON.

- If the host machine recovers, download the system software (SYSTEM, LANG, RUI).
- If the symptom still recurs, go to the Step 3.

3. Replacement of HDD and system software download

Replace the HDD with a new one and start up the host machine in SafeMode (turn the power ON while pressing 2+8 keys). Format the HDD (ALL) and download the system software (SYSTEM, LANG, RUI) using the SST, and then turn the power OFF/ON.

HDD: WM2-5188

Note: After replacement of the HDD, be sure to follow the instructions described in the Service Manual [Chapter 12 Standards and Adjustments > Electrical Components > After Replacing the HDD].

13.3.9.29 E602-0402 Error Code: Recovered after HD-CLEAR

[Case in the field]

Field Remedy

E602-0402 can be displayed when no image data exists although it should be stored in [FSTPDEV] (the image storage area in the HDD). This error is determined by the data held in the SRAM on the SRAM Board PCB Ass'y. So, the host machine will not recover by replacement of the HDD without initializing the SRAM. Executing [HD-CLEAR] in service mode will initialize the image storage area and update the data in the SRAM.

Consequently, when any E602-related error codes occur, do not replace the HDD first. Follow the instructions described in Service Manual [Chapter 14 Self Diagnosis > Error Code Details > E602 in detail].

Outline of procedures

1. Partition check and recovery process
In service mode [COPIER> Function> SYSTEM> CHK-TYPE], enter [1]. Select [HD-CHECK] and press [OK]. Upon completion, turn the power OFF/ON.
- If the host machine recovers, download the system software (SYSTEM, LANG, RUI).
- If the symptom still recurs, go to the Step 2.

2. Partition initialization
In service mode [COPIER> Function> SYSTEM> CHK-TYPE], enter [1]. Select [HD-CLEAR] and press [OK]. Upon completion, turn the power OFF/ON.
- If the host machine recovers, download the system software (SYSTEM, LANG, RUI).
- If the symptom still recurs, go to the Step 3.

3. Replacement of HDD and system software download
Replace the HDD with a new one and start up the host machine in SafeMode (turn the power ON while pressing 2+8 keys). Format the HDD (ALL) and download the system software (SYSTEM, LANG, RUI) using the SST, and then turn the power OFF/ON.
HDD: WM2-5188
Note: After replacement of the HDD, be sure to follow the instructions described in the Service Manual [Chapter 12 Standards and Adjustments > Electrical Components > After Replacing the HDD].

13.3.9.30 E602-0111 Error Code

[Case in the field]

Description

E602-0111 can be displayed when an error occurs in the DOSDEV (retains multipurpose data). The suspect causes are HDD contact failure, HDD failure, main controller PCB (Main) failure.

Remedy

1. Turn the power OFF and make sure that the 2 types of cables (for Power Supply and IDE) that come from the HDD are securely fitted. If the symptom still recurs, go to the Step 2.
2. Replace the HDD with a new one and start up the host machine in SafeMode (turn the power ON while pressing 2+8 keys). Format the HDD (ALL) and download the system software (SYSTEM, LANG, RUI) using the SST. If the symptom still recurs, go to the Step 3.

3. Replace the Main Controller PCB (Main) with a new one.
HDD: WM2-5188
Main Controller PCB (Main): FG3-3221

13.3.9.31 E602-0113 Error Code: Because of faulty HDD

[Inspected by Canon Inc.]

Description

E602-0113 can be displayed when a readout error occurs in the general data storage area of the HDD.

Cause

As a result of inspection, it was found that the HDD was faulty.

Field Remedy

Follow the steps below:
1. Partition check and recovery process
In service mode [COPIER> Function> SYSTEM> CHK-TYPE], enter [1]. Select [HD-CHECK] and press [OK]. Upon completion, turn the power OFF/ON.
- If the host machine recovers, reinstall the system software (SYSTEM, LANG, RUI).
- If the symptom still recurs, go to the Step 2.
2. Partition initialization
In service mode [COPIER> Function> SYSTEM> CHK-TYPE], enter [1]. Select [HD-CLEAR] and press [OK]. Upon completion, turn the power OFF/ON.
- If the host machine recovers, reinstall the system software (SYSTEM, LANG, RUI).
- If the symptom still recurs, go to the Step 3.
3. Replacement of HDD and system software download
Replace the HDD with a new one and start up the host machine in SafeMode (turn the power ON while pressing 2+8 keys). Format the HDD (ALL) and download the system software (SYSTEM, LANG, RUI) using the SST, and then turn the power OFF/ON.
HDD: WM2-5188
Note: After replacement of the HDD, be sure to follow the instructions described in the Service Manual [Chapter 12 Standards and Adjustments > Electrical Components > After Replacing the HDD].

13.3.9.32 E674-0001 Error Code: Because J1210 connector is not securely fitted on Main Controller PCB (Main)

[Inspected by Canon Inc.]

Description

E674-0001 can be displayed when the fax board can be detected, but cannot communicate with the host machine.

Cause

As a result of inspection, this symptom occurred because the connector at J1210 on the Main Controller PCB (Main) was not securely fitted.

Field Remedy

Make sure that the connectors are securely fitted between J1210 on the Main Controller PCB (Main) and the FAX board, and there is no pinched wire.

13.3.9.33 E732-0001 Error Code: Reader Controller PCB is faulty

[Case in the field]

Description

E732-0001 can be displayed when a communication error occurs.

Cause

In the field, this symptom occurred because the Reader Controller PCB was faulty.

Field Remedy

1. Make sure that the connector between the host machine and the reader unit is securely fitted.

2. Make sure that the connectors on the Reader Controller PCB are securely fitted or there is no pinched cables.

3. Remove and insert the Main Controller PCB (Sub) from the Main Controller PCB (Main). If the symptom still recurs, go to the Step 4.

4. Replace the Reader Controller PCB with a new one.

Reader Controller PCB: FG3-3159
Main Controller PCB (Sub): FM2-0209

13.3.9.34 E732-0001 Error Code: iRC3200 locks up during copying

[Inspected by Canon Inc.]

Description

E732-0001 can be displayed when a reader communication error occurs.

Cause

As a result of inspection, it was found that this symptom occurred because of poor soldering of J1302-34pin on the Main Controller PCB (Sub).

Field Remedy

1. Make sure that the connectors are securely fitted between J1302 on the Main Controller PCB (Sub) and J502 on the Reader Controller PCB and that there is no pinched cable.
2. If no problem is found, replace the Main Controller PCB (Sub) with a new one.

Main Controller PCB (Sub): FM2-0209
Reader Controller PCB: FG3-3159

13.3.9.35 E747-8702 / E747-00FF Error Code: Scanning lamp keeps lighting up at its home position when making a copy

[Case in the field]

< Description >

E747 indicates that IC1010 (for image processing ASIC) or IC1012 (memory control/communication control ASIC, CPU) on the Main Controller PCB has a fault (e.g., image data transfer error).

< Field Remedy >

In the field, this symptom occurred because the Main Controller PCB (Sub) was faulty (1 case). Remove and reinsert the Main Controller PCB (Sub). If the symptom still recurs, replace it with a new one.

Main Controller PCB (Sub): FM2-0209

13.3.9.36 E747-0031 Error Code: Half of image becomes blank when printing list in user mode

[Inspected by Canon Inc.]

Description

E747 can be displayed when an error (e.g., image data transfer error) occurs in IC1015 (image processing ASIC) or IC1012 (memory control/communication control ASIC, CPU) on the Main Controller PCB.

Cause

As a result of inspection, it was found that this symptom occurred because the Main Controller PCB (Main) was faulty.

Field Remedy

Make sure that the connectors are securely fitted on the Main Controller PCB and there is no pinched wire. If there is no abnormality, replace the PCB with a new one.
Main Controller PCB (Main): FG3-3221

13.3.9.37 E803-0002 Error Code: Front Door Switch (SW3) is faulty

[Inspected by Canon Inc.]

Description

E803-0002 can be displayed when it is detected that 13V is not supplied to the 13V line that is connected by the front door switch (SW3) upon closure of the front door.

Field Remedy

As a result of inspection, it was found that the front door switch (SW3) was faulty and 13V line was not connected, leading to this symptom. So, check whether the front door switch works normally.
Front Door Switch (SW3): WC2-5327

13.3.9.38 E803-0001/E227-0004 Error Code: Poor soldering on Printer Power Supply PCB

[Inspected by Canon Inc.]

Description

E803-0001 can be displayed when it is detected that 24V is not supplied to the 24V line that is connected by the front door switch (SW3) upon closure of the front door.

E227-0004 can be displayed when it is detected that 24V is not supplied to the 24V line of the Reader unit when indicates that an error has occurred in supplying power to the Reader unit, and can be displayed when it is detected that the 24V line opens or there is no output.

Cause

As a result of inspection, it was found that 24V was not output due to poor soldering on the Printer Power Supply PCB, leading to this symptom.

Field Remedy

Follow the steps in the designated order.

1. Check whether the front door switch (SW3) works normally.
2. Make sure that the connectors are securely fitted between the Printer Power Supply PCB, the Controller Power Supply PCB, and the DC Controller PCB, and also that there is no pinched cable.
3. If no problem is found, replace the Printer Power Supply PCB with a new one.

Printer Power Supply PCB: FM2-0190 (220/240V), FM2-0216 (100/120V)

13.4 Outline of Electrical Components

13.4.1 Clutch/Solenoid

13.4.1.1 Clutch/Solenoid Table

<Reader Unit>
The reader unit does not have clutches or solenoids.
<Printer Unit>

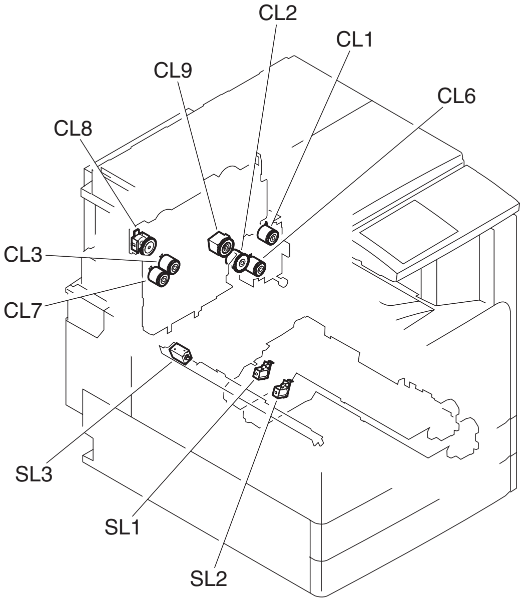
T-13-5

Ref.	Name	Description
CL1	manual feed pickup clutch	drives the manual feed pickup roller
CL2	registration cultch	drives the registration roller
CL3	developing sleeve clutch	drives the developing sleeve
CL6	duplex feed clutch	drives the duplexing roller 1/2
CL7	toner supply clutch	drives the toner feedscrew (Bk)
CL8	ITB cleaning clutch	drives the ITB cleaning blade
CL9	secondary transfer clutch	moves the secondary transfer roller in contact/ away
SL1	cassette 1 pickup solenoid	drives the cassette 1 pickup roller
SL2	cassette 2 pickup solenoid	drives the cassette 2 pickup roller
SL3	ATR shutter solenoid	drives the ATR shutter

T-13-6

Ref.	Parts number	I/O		PART-CHK	DC controller PCB
CL1	FM2-0197	P004-6	1:ON	CL>7	J320
CL2	FH6-5075	P004-5	1:ON	CL>6	J320

Ref.	Parts number	I/O		PART-CHK	DC controller PCB
CL3	FH6-5076	P004-2	1:ON	CL>3	J311
CL6	FM2-0197	P004-4	1:ON	CL>5	J320
CL7	FH6-5005	P004-0	1:ON	CL>1	J311
CL8	FM2-0197	P004-1	1:ON	CL>2	J311
CL9	RH7-5168	P004-3	1:ON	CL>4	J320
SL1	FH6-5055	P005-7	1:ON	SL>1	J322
SL2	FH6-5055	P005-6	1:ON	SL>2	J322
SL3	FH6-5078			SL>3	J307


CL2
CL1
CL9
CL6
CL8
CL3
CL7
SL3
SL1
SL2

F-13-29

13.4.2 Motor

13.4.2.1 Motor Table

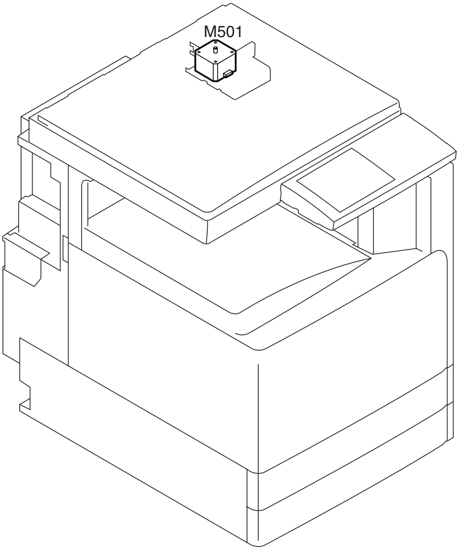
<Reader Unit>

T-13-7

Ref.	Name	Description
M501	reader motor	drives the carriage

T-13-8

Ref.	Parts number	I/O		reader controller PCB
M501	FH5-1028	P002-2	1: forward	J505
			0: reverse	



F-13-30

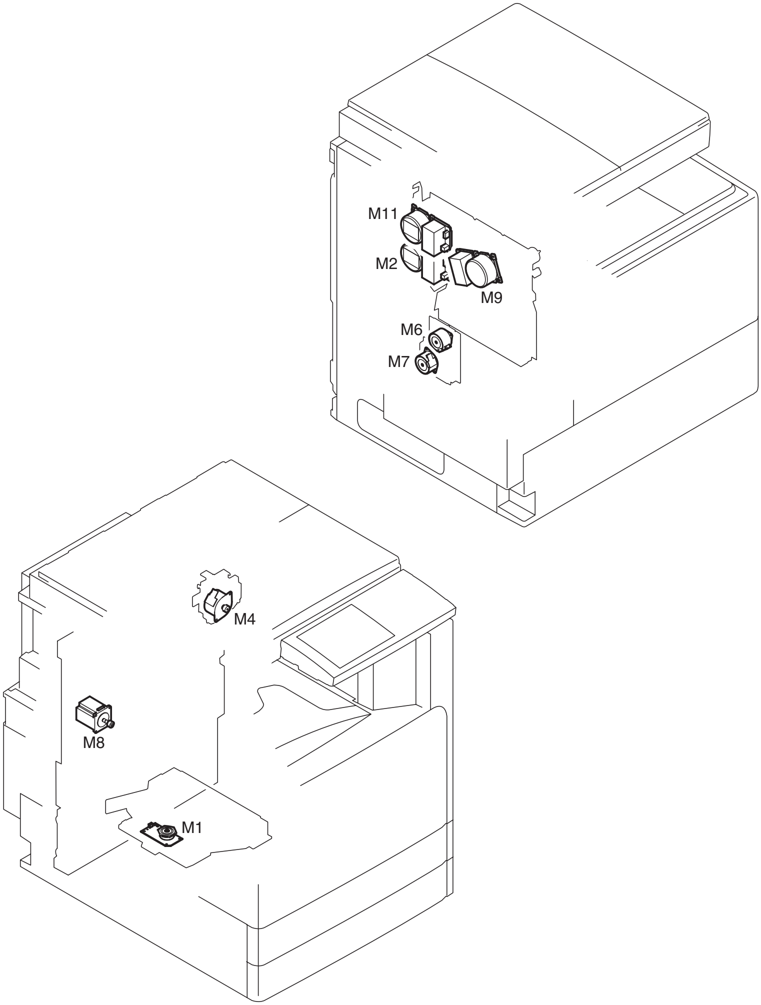
<Printer Unit>

T-13-9

Ref.	Name	Description
M1	polygon motor	drives the laser scanner
M2	main motor	drives major printer unit components
M4	delivery motor 1	drives the delivery roller
M6	cassette 1 pickup motor	drives the pickup unit 1
M7	cassette 2 pickup motor	drives the pickup unit 2
M8	rotary motor	drives the rotary
M9	drum motor	drives the drum
M11	fixing motor	drives the fixing assembly

T-13-10

Ref.	Parts number	I/O		PART-CHK	DC controller PCB	E code
M1	FM2-0041(the scanner Unit)			MTR>1	J328	
M2	FH5-1001			MTR>7	J311,312	E010
M4	FH6-1997			MTR>5	J314	
M6	FH6-1972			MTR>3	J321	
M7	FH6-1972			MTR>4	J321	
M8	FM2-0080			MTR>2	J313	
M9	FH5-1004			MTR>6	J311,J312	E012
M11	FH5-1006	P017-0 (fixing motor locked)	1:ON	MTR>8	J315,316	E014
		P017-1 (fixing speed switch-over)	1:half-speed			
		P017-2 (fixing motor ON)	1:ON			


M11
M2
M9
M6
M7
M4
M8
M1

F-13-31

13.4.3 Fan

13.4.3.1 Fan Table

<Reader Unit>

The reader unit does not have a fan.

<Printer Unit COPY>

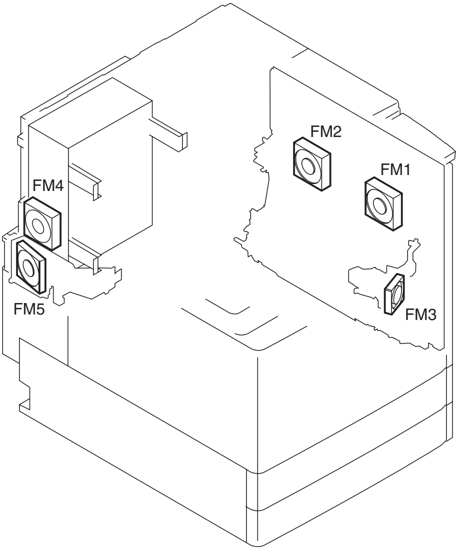
T-13-11

Ref.	Name	Description
FM1	exhaust fan (front)	discharges heat from fixing unit
FM2	exhaust fan (rear)	discharges heat from fixing unit
FM3	ITB duct fan	prevents overheating near ITB/fixing assembly
FM4	controller fan	cools inside controller box
FM5	toner suction fan	collects stray toner inside machine

T-13-12

Ref.	Parts number	I/O		PART-CHK	main controller PCB	DC controller PCB	E Code
FM1	FH6-1998	P003-2 exhaust fan 1 half speed (machine rear)	1 half speed	MTR>1		J317	E805-0001
		P005-0 exhaust fan 1 full speed (machine rear)	1 ON				

Ref.	Parts number	I/O		PART-CHK	main controller PCB	DC controller PCB	E Code
FM2	FH6-1998	P006-2 exhaust fan 2 full speed (machine front)	1 ON	MTR>2		J317	E805-0002
		P006-3 exhaust fan 2 full speed (machine front)	1 ON				
FM3	FH6-1885			MTR>4		J308	E805-0003
FM4	FH5-1033				J1113		E804-0004
FM5	FH6-1999			MTR>3		J311	E805-0004



F-13-32

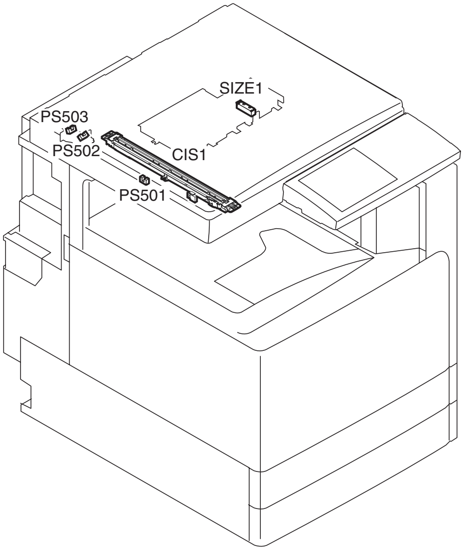
13.4.4 Sensor

13.4.4.1 Sensor Table

<Reader Unit>

T-13-13

Ref.	Name	Description	Parts number	reader controller PCB
PS501	CIS HP sensor	detects CIS home position	FH7-7462	J506
PS502	copyboard cover open/closed sensor (front)	detects the state (open/closed) of the copyboard cover	FH7-7312	J506
PS503	copyboard cover open/closed sensor (rear)	detects the state (open/closed) of the copyboard cover	FH7-7312	J506
CIS1	CIS	reads originals	FM2-1563	
SIZE1	original size sensor	identifies the size of originals	FH7-7569	J511



F-13-33

<Printer Unit>

T-13-14

Ref.	Name	Description
PS1	cassette 1 paper sensor	detects the presence/absence of paper in cassette 1
PS2	cassette 2 paper sensor	detects the presence/absence of paper in cassette 2
PS3	cassette 1 paper level A senor	detects paper level A in cassette 1
PS4	cassette 1 paper level B sensor	detects paper level B in cassette 1
PS5	cassette 2 paper level A sensor	detects paper level A in cassette 2
PS6	cassette 2 paper level B sensor	detects paper level B in cassette 2
PS7	manual feed tray paper sensor	detects the presence/absence of paper in the manual feed tray
PS9	pre-registration sensor	detects paper for pre-registration
PS10	cassette 1 retry sensor	detects retry for cassette 1
PS11	cassette 2 retry sensor	detects retry for cassette 2

Ref.	Name	Description
PS12	pickup cover sensor	detects the state (open/closed) of the pickup cover
PS13	fixing outlet sensor	detects paper at the fixing outlet
PS14	No. 1 delivery sensor	detects delivery
PS15	No. 1 delivery full sensor	detects the state (full) of delivery
PS17	duplex feed sensor	detects movement for duplexing
PS18	feed cover sensor	detects the state of the feed cover
PS19	ITB HP sensor	detects ITB home position
PS20	waste toner sensor (light-emitting)	detects waste toner (light-emitting)
PS21	waste toner sensor (light-receiving)	detects waste toner (light-receiving)
PS22	front cover sensor	detects the state (open/closed) of the front cover
PS23	patch image read sensor	detect the density of toner image on the drum
PS24	rotary sensor	detects rotary home position
PS25	fixing inlet sensor	detects paper at the fixing inlet
PS26	transparency sensor	identifies transparencies
PS27	ATR sensor	detects the density of toner on the developing cylinder
PS28	toner cartridge access cover sensor	detects the state (open/closed) of the toner cartridge access cover
HU1	environment sensor	detects the humidity inside the machine
TH1	fixing main thermistor	detects the temperature of the fixing roller (middle)
TH2	fixing sub thermistor	detects the temperature of the fixing roller (ends)
TP1	thermal switch	cuts off the power line to the heater in response to overheating

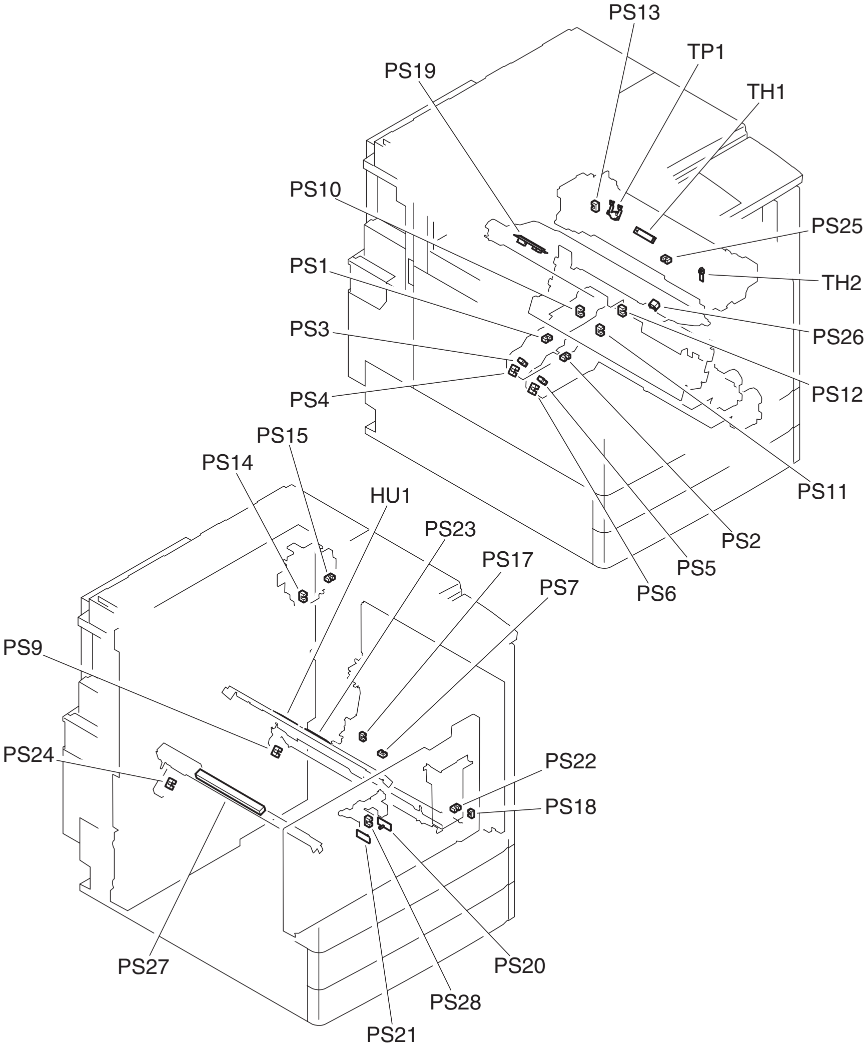
T-13-15

Ref.	Parts number	I/O		DC controller PCB	JAM/E Code
PS1	FH7-7312	P001-7	1 paper absent	J322	
PS2	FH7-7312	P001-3	1 paper absent	J322	
PS3	FH7-7312	P001-6	1 about half or less	J322	
PS4	FH7-7312	P001-5	1 about 50 sheets or less	J322	
PS5	FH7-7312	P001-2	1 about half or less	J322	
PS6	FH7-7312	P001-1	1 about 50 sheets or less	J322	
PS7	FH7-7312	P002-2	0 paper present	J317	
PS9	FH7-7312	P002-7	1 paper present	J320	xx05
PS10	FH7-7312	P001-4	1 detected	J322	xx01
PS11	FH7-7312	P001-0	1 detected	J322	xx02
PS12	FH7-7312			J321	
PS13	FH7-7312	P002-6	1 paper present	J316	xx07
PS14	FH7-7312	P002-5	1 paper present	J314	xx08
PS15	FH7-7312	P002-4	0 paper present	J314	
PS17	FH7-7312	P002-3	1 paper present	J317	xx0D
PS18	FH7-7312			J308	
PS19	FH7-7630			J320	
PS20	FG3-2374			J308	
PS21	FG3-2375			J308	
PS22	FH7-7312			J308	
PS23	FH7-7629			J310	
PS24	FH7-7312			J311	E021
PS25	FH7-7312			J316	xx06 (residual paper only)
PS26	RH7-7129			J320	
PS27	FM2-0096			J307	

Ref.	Parts number	I/O	DC controller PCB	JAM/E Code
PS28	FH7-7312		J308	
HU1	FH7-7620		J310	

T-13-16

Ref.	Parts number	DC controller PCB	AC driver PCB
TH1	FH7-7631	J316	
TH2	FH7-7632	J316	
TP1	FH7-6367		J202


PS13
TP1
PS19
TH1
PS10
PS25
PS1
TH2
PS3
PS26
PS4
PS12
PS15
PS14
PS11
HU1
PS23
PS2
PS17
PS5
PS7
PS6
PS9
PS24
PS22
PS18
PS27
PS20
PS28
PS21

F-13-34

13.4.5 Switch

13.4.5.1 Switch Table

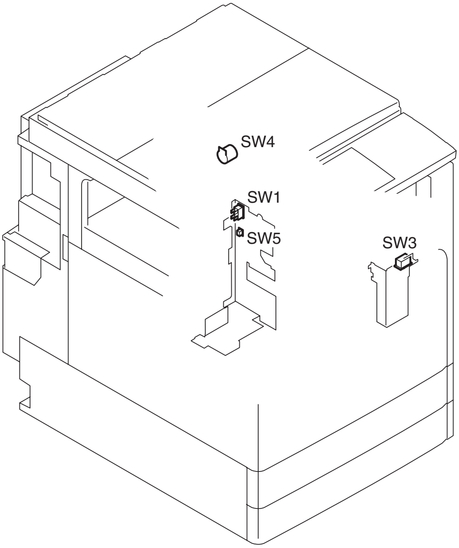
<Reader Unit>
The reader unit doe not have a switch.
<Printer Unit>

T-13-17

Ref.	Name	Description
SW1	main power switch	turns on/off the main power
SW3	cover open/closed switch	detects the state (open/closed) of the front cover/ right door
SW4	control key	serves to control copy work
SW5	environment heater switch	turns on/off the environment heater

T-13-18

Ref.	Parts number	COPIER>FUNCTION		main controller PCB
SW1	FH7-6368			
SW3	WC2-5327			
SW4	FG3-3004	INSTALL>KEY	0: do not recognize control key. [at time of shipment/ after RAM initialization: 0]	J1208
			1: recognize control key function.	
SW5	WC1-5182			



F-13-35

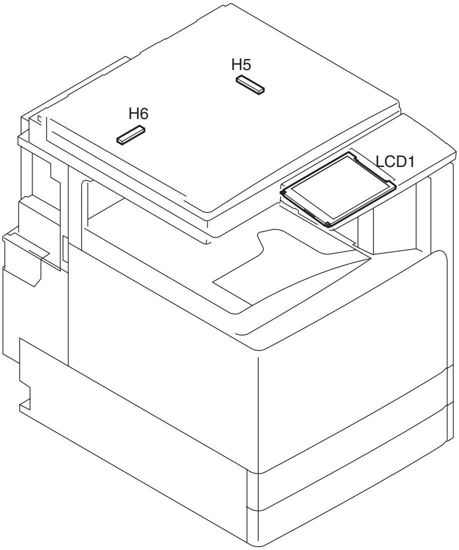
13.4.6 Lamps, Heaters, and Others

13.4.6.1 Lamp. Heaters, and Others Table

<Reader Unit>

T-13-19

Ref.	Name	Parts number	Description
H5	anti-condensation heater (left)	NPN	prevents condensation on the copyboard glass
H6	anti-condensation heater (right)	NPN	prevents condensation on the reading glass
LCD1	LCD panel	FL2-1148	provides visual indications on the control panel (touch panel)



F-13-36

<Printer Unit>

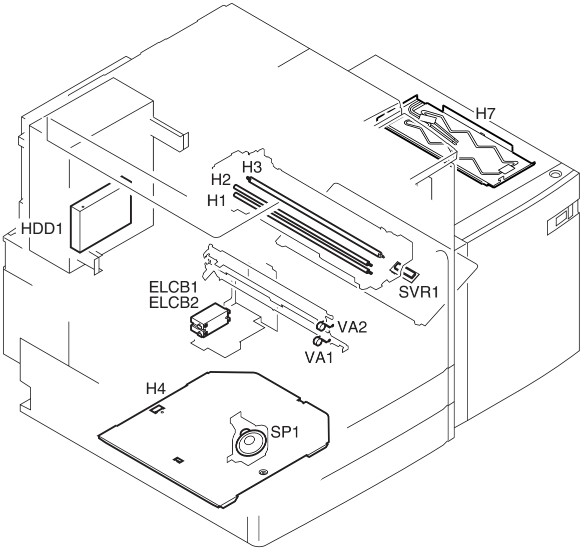
T-13-20

Ref.	Name	Description
H1	fixing main heater	serves the main heater (controls the temperature of the fixing roller)
H2	fixing sub heater	serves the sub heater (controls the temperature of the fixing roller)
H3	fixing heat retention heater	retains heat (keeps the pressure roller heated)
H4	cassette heater	prevents absorption of moisture by paper inside the cassette
H7	deck heater	prevents absorption of moisture by paper inside the side deck
ELCB1	leakage breaker (100V)	protects against leakage
ELCB2	leakage breaker (230V)	protects against leakage

Ref.	Name	Description
VA1,2	varistor	protects against a voltage surge
HDD1	hard disk	holds programs and images
SVR1	paper width detecting volume	detects the width of paper from the manual feed tray
SP1	speaker	provides audio indication (fax unit)

T-13-21

Ref.	Parts number	main controller PCB	DC controller PCB	E Code
H1	FG3-2787 (100V)			
	FG3-2790 (120V)			
	FG3-2791 (240V)			
H2	FG3-2787 (100V)			
	FG3-2790 (120V)			
	FG3-2791 (240V)			
H3	FH7-4768-000			
H4	NPN			
H7	NPN			
ELCB1	FH7-7624			
ELCB2	FH7-7623			
VA1,2	FF3-4529			
HDD1	WM2-5188	J1110/1111		E315
SVR1	FG3-2800		J317	
SP1	FH5-3218			



F-13-37

13.4.7 PCBs

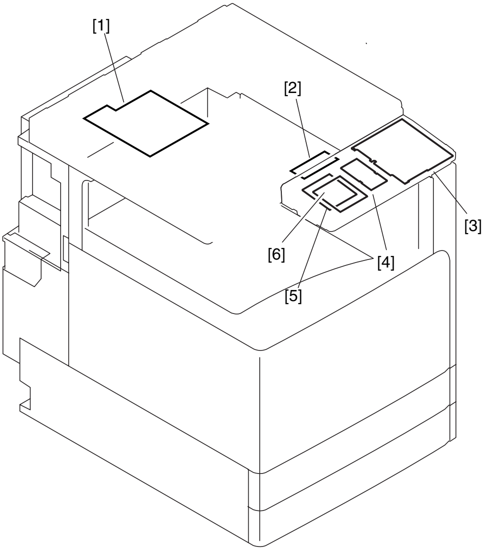
13.4.7.1 PCBs Table

<Reader Unit>

T-13-22

Ref.	Name	Parts number	Description
[1]	reader controller PCB	FG3-3159	controls the reader unit/ADF
[2]	CIS inverter PCB	FH3-7215	controls the scanning lamp
[3]	PANEL-SW-CL PCB	FG6-8938	communicates the image data detected by the reader unit to the printer unit
[4]	control panel inerter PCB	FG3-2834	controls the activation of the LCD backlight
[5]	control panel CPU PCB	FG6-8939	controls the control panel

Ref.	Name	Parts number	Description
[6]	control panel KEY PCB	FH6-0834	controls the inputs from the keypad



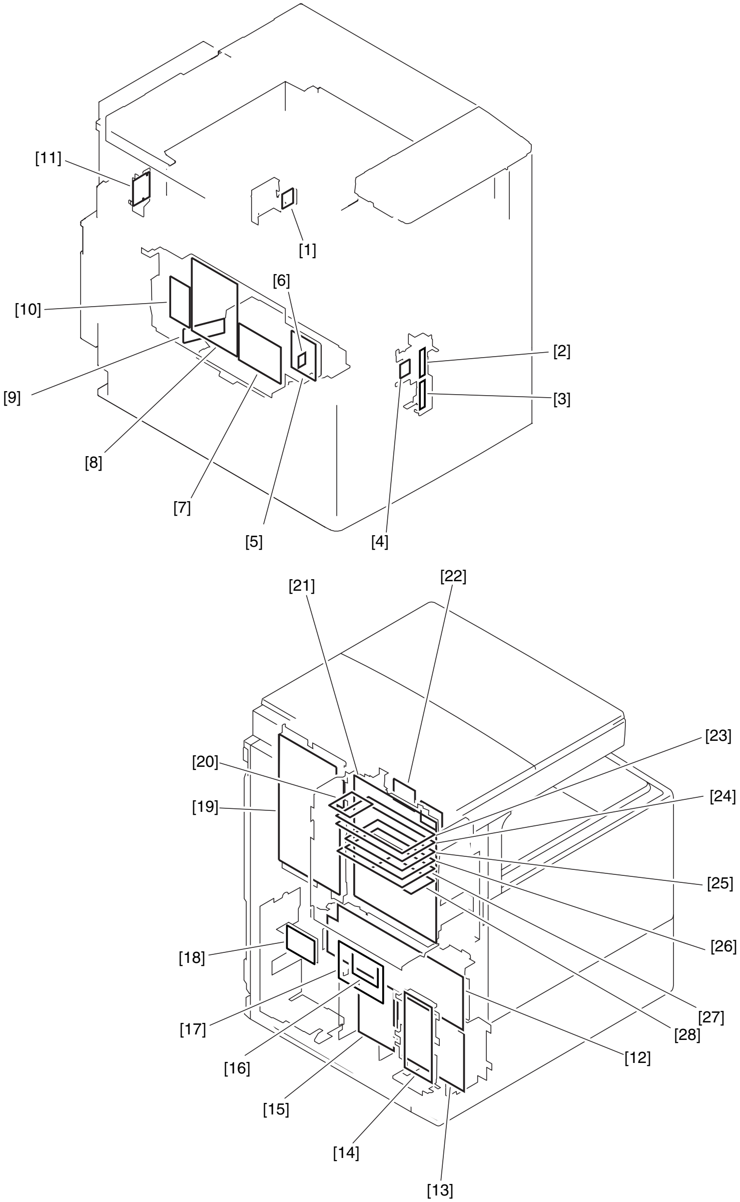
F-13-38

<Printer Unit>

T-13-23

Ref.	Name	Parts number	Description
[1]	arrestor PCB	FG3-2851	protects against over-voltage
[2]	cassette 1 size detection PCB	FG3-2798	detects the size setting of cassette 1
[3]	cassette 2 size PCB	FG3-2798	detects the size setting of cassette 2
[4]	cassette size detection relay PCB	NPN	relays the detected size setting of the cassette
[5]	pseudo CIP PCB	FM2-0103	generates pseudo CI signals
[6]	BD PCB	FM2-0041	generates the BD signal
[7]	NCU PCB	HG5-1866	controls line switching

Ref.	Name	Parts number	Description
[8]	fax board PCB	FG3-1587	controls the fax unit
[9]	laser driver PCB	FM2-0041	controls the laser unit
[10]	G3F AX power supply PCB	FG3-2801	serves as the power supply for G3FAX
[11]	modular PCB	FG3-3464	serves as an interface
[12]	high-voltage power supply PCB	FG3-2796	serves as a high-voltage power supply
[13]	printer power supply PCB	FM2-0190 (100/ 120V) FM2-0216 (230V)	serves as the printer power supply
[14]	controller power supply PCB	FG3-2792	serves as the controller power supply
[15]	AC driver PCB	FM2-0190 (100/ 120V) FM2-0216 (230V)	drives AC loads
[16]	high-voltage sub PCB	FG3-3584	serves as a high-voltage sub power supply
[17]	accessories power supply PCB	FH3-2656 (100/ 120V) FH3-2657 (230V)	serves as the power supply for accessories
[18]	environment switch PCB	FG3-2797	serves as the heater power switch
[19]	DC controller PCB	FG3-2795	controls the printer unit/accessories
[20]	SRAM PCB	FG3-3225	retains service mode settings/HDD control information
[21]	main controller PCB (main)	FG3-3221	processes image data for output to the printer unit
[22]	ECO-ID PCB	NPN	assists image processing
[23]	expansion bus PCB	FM2-0210	serves the color LCD controller, card reader interface, etc.
[24]	main controller PCB (sub)	FM2-0209	converts images from the reader unit
[25]	resolution conversion board	FG3-2728	converts resolution
[26]	USB board/TokenRing board	FG3-3226	serves as an USB/TokenRing interface
	TokenRing board	FG3-3223	
[27]	UFR board	FG3-3223	executes image rendering
[28]	LAN board	FG3-3135	permits connection to a network


[11]
[1]
[6]
[10]
[2]
[9]
[3]
[8]
[7]
[5]
[4]
[21]
[22]
[23]
[20]
[24]
[19]
[25]
[26]
[18]
[27]
[17]
[28]
[12]
[16]
[15]
[14]
[13]

F-13-39

13.4.8 Variable Resistors (VR), Light-Emitting Diodes (LED), and Check Pins by PCB

13.4.8.1 Variable Resistors (VR), Light-Emiting Diodes (LED), and Check Pins by PCB

Of the variable resistors (VR), light-emitting diodes (LED), and check pins used in the machine those needed in the field are discussed.

⚠

- Although normal, some LEDs may emit dim light when they remain off becouse of leakege current.
- Keep the following symbols in mind;

●---VR that may be used in the field.

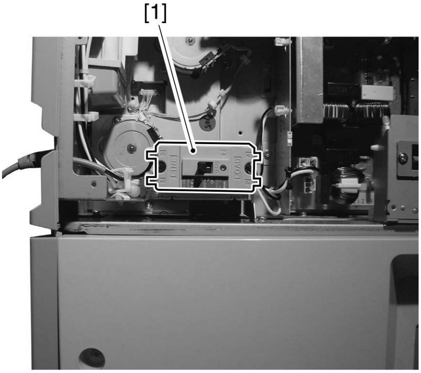
⊘---VR that must not be used in the field.

13.4.8.2 Points to Note about the Leakage Breaker

⚠**Points to Note When Checking the Output of PCBs**

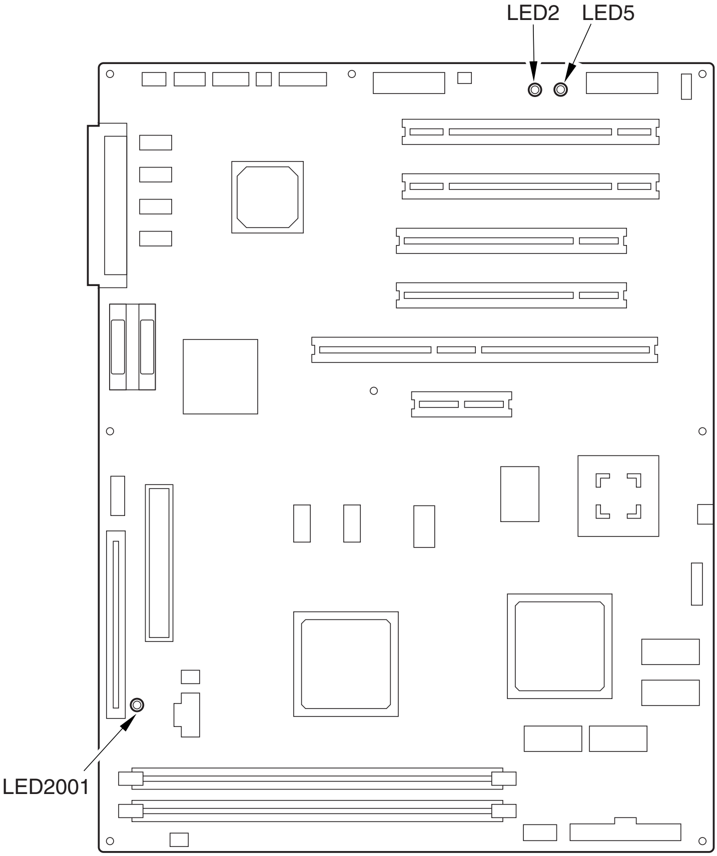
While the machine is supplied with power, an AC voltage is applied to the terminlas of the leaksge breaker [1].

Be sure not to touch it inadvertently during a check.



F-13-40

13.4.8.3 Main Controller PCB (main)

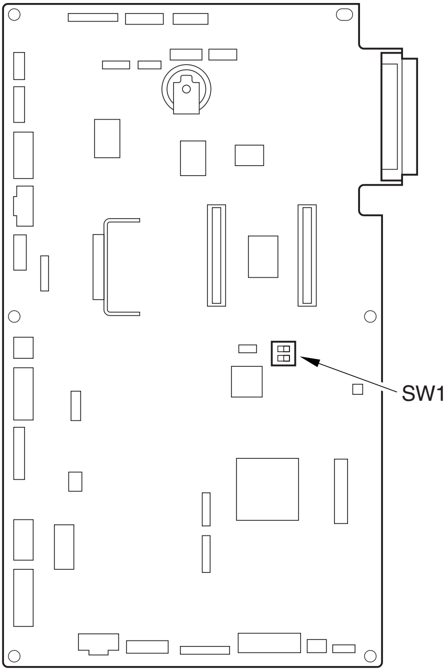

LED2
LED5
LED2001

F-13-41

T-13-24

Notation	Description
LED2001	in operation
LED2	+3.3V (all-night) being supplied
LED5	+3.3V (non-all night) being supplied

13.4.8.4 DC Controller PCB

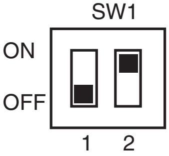


F-13-42

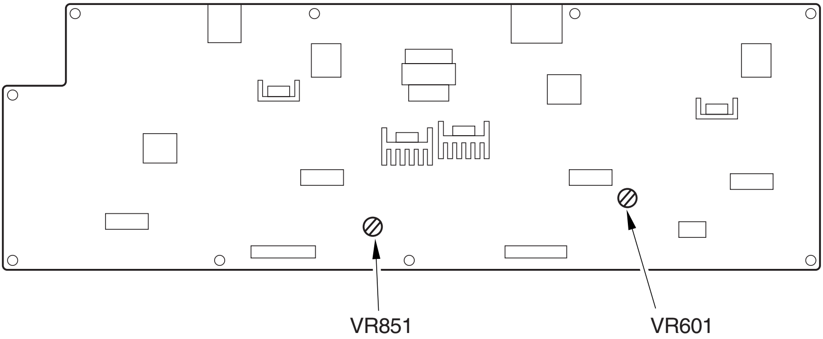
T-13-25

Notation	Description
SW1	for high-viltage PCB

Be sure that the bits of the switch are positioned as follows:

Notation	Description
	 SW1 ON OFF 1 2

13.4.8.5 High-Voltage Power Supply PCB


VR851
VR601

F-13-43

T-13-26

Notation	Description
VR601	for factory adjustment
VR851	for factory adjustment

Chapter 14 Self Diagnosis

Contents

14.1 Error Code Table 14-1
  14.1.1 Error Code 14-1
14.2 Error Code Details 14-5
  14.2.1 Error Code Details Table 14-5
14.3 Error Codes (SEND) 14-40
  14.3.1 Self-Diagnostic Display 14-40
  14.3.2 List of Error Codes without Messages 14-43
14.4 Error Code Details 14-53
  14.4.1 E code Overview 14-53
  14.4.2 E000 14-53
  14.4.3 E001 14-53
  14.4.4 E002 14-56
  14.4.5 E003 14-58
  14.4.6 E004 14-58
  14.4.7 E006 14-58
  14.4.8 E008 14-59
  14.4.9 E010 14-59
  14.4.10 E012 14-60
  14.4.11 E013 14-60
  14.4.12 E014 14-61
  14.4.13 E020 14-61
  14.4.14 E021 14-65
  14.4.15 E026 14-66
  14.4.16 E032 14-67
  14.4.17 E045 14-67
  14.4.18 E067 14-68
  14.4.19 E070 14-68
  14.4.20 E100 14-69
  14.4.21 E110 14-70
  14.4.22 E202 14-71
  14.4.23 E225 14-71
  14.4.24 E227 14-72

14.4.25 E240 14-73
14.4.26 E243 14-73
14.4.27 E248 14-74
14.4.28 E315 14-75
14.4.29 E351 14-75
14.4.30 E400 14-76
14.4.31 E490 14-77
14.4.32 E500 14-77
14.4.33 E503 14-78
14.4.34 E505 14-78
14.4.35 E514 14-79
14.4.36 E519 14-80
14.4.37 E530 14-81
14.4.38 E531 14-82
14.4.39 E532 14-83
14.4.40 E535 14-84
14.4.41 E537 14-85
14.4.42 E540 14-86
14.4.43 E542 14-88
14.4.44 E577 14-88
14.4.45 E580 14-89
14.4.46 E584 14-90
14.4.47 E590 14-90
14.4.48 E591 14-91
14.4.49 E592 14-91
14.4.50 E593 14-92
14.4.51 E5F0 14-93
14.4.52 E5F1 14-93
14.4.53 E5F2 14-94
14.4.54 E5F3 14-94
14.4.55 E5F4 14-95
14.4.56 E5F5 14-96
14.4.57 E5F6 14-96
14.4.58 E5F8 14-97
14.4.59 E5F9 14-98
14.4.60 E601 14-100

14.4.61 E602 14-100
14.4.62 E602 in detail 14-101
14.4.63 E604 14-106
14.4.64 E605 14-106
14.4.65 E606 14-107
14.4.66 E674 14-107
14.4.67 E677 14-108
14.4.68 E710 14-109
14.4.69 E711 14-109
14.4.70 E712 14-110
14.4.71 E713 14-111
14.4.72 E716 14-111
14.4.73 E717 14-111
14.4.74 E719 14-112
14.4.75 E730 14-113
14.4.76 E731 14-115
14.4.77 E732 14-116
14.4.78 E733 14-117
14.4.79 E740 14-118
14.4.80 E743 14-119
14.4.81 E744 14-119
14.4.82 E745 14-121
14.4.83 E746 14-122
14.4.84 E747 14-122
14.4.85 E803 14-123
14.4.86 E804 14-124
14.4.87 E805 14-124

14.1 Error Code Table

14.1.1 Error Code

The machine is equipped with a function that checks its state (particularly, sensor output); it runs a check and, upon detection of a fault, indicates an error code on its control panel.

The tables that follow show individual codes and the causes they are used for, and provide general descriptions of the codes.

A 4-digit code is a detail code, and is indicated in service mode: COPIER>DISPLAY>ERR.

T-14-1

Code	**Description**
E000	inadequate rise in the temperature of the fixing unit at power-on
E001	error in the fixing unit
E002	inadequate rise in the temperature of the fixing unit
E003	low temperature error associated with the fixing unit after standby
E004	protection circuit error of the fixing unit
E006	fixing unit connection error
E008	fixing roller service life error
E010	main motor error
E012	drum motor error
E013	ITB waste toner full error
E014	fixing motor error
E020	drum/developer-related error
E021	developing assembly rotary error
E026	toner absent error
E032	NE controller counter error

Code	Description
E045	transparency sensor error
E067	high-voltage-related error
E070	ITB HP detection error
E100	BD error
E110	laser scanner motor operation error
E202	CIS unit HP detection error
E225	CIS light intensity error
E227	reader unit power supply error
E240	communication error between main controller and DC controller
E243	control panel error
E248	backup memory error
E315	image data error
E351	ECO PCB error
E400	feeder communication error
E490	wrong model error
E500	finisher communication error
E503	finisher internal communication error
E505	finisher backup memory error
E514	stack delivery error/trailing edge assist motor error
E519	gear change motor error
E530	rear alignment error/front alignment error
E531	stapler error
E532	stapler relocation error
E535	swing error
E537	front alignment error/rear alignment error
E540	stack tray ascent/descent error, upper tray ascent/descent error

Code	Description
E542	lower tray ascent/descent error
E577	paddle error
E584	shutter error
E590	punch error
E591	punch dust sensor error
E592	punch horizontal registration sensor error
E593	punch relocation error
E5F0	saddle paper positioning error
E5F1	saddle paper folding error
E5F2	saddle guide error
E5F3	saddle alignment error
E5F4	saddle rear stapler error
E5F5	saddle front stapler error
E5F6	saddle butting error
E5F8	saddle connector error
E5F9	saddle switch error
E602	hard disk error
E604	image memory (SDRAM) shortage error
E674	fax board error
E677	external controller error
E710	IPC initialization error
E711	IPC function error
E712	communication error between ADF and reader unit
E717	communication error with NE controller
E719	communication error with coin vendor/card reader
E730	PDL error

Code	Description
E731	UFR board error
E732	reader unit communication error
E733	printer unit communication error
E740	Ethernet board error
E743	DDI communication error (reader unit side)
E744	language file/boot ROM error
E745	TokeRing board error
E746	accessories board wrong model error
E747	image processing ASIC or memory control/communication control ASIC error
E803	door close error
E804	controller fan error
E805	fan error

14.2 Error Code Details

14.2.1 Error Code Details Table

T-14-2

Code	Description	Remedy
E000	inadequate rise in temperature of the fixing unit at power-on	
0001	delay error, temperature rise, at power-on At power-on, the output of the non-contact thermistor does not reach 50 deg C.	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.
E001	error in the fixing unit	
0001	high reading, end thermistor; hardware The reading of the end thermistor is abnormally high (230 deg C or more) for 400 msec continuously (hardware detection).	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.
0002	high reading, non-contact thermistor; software The reading of the non-contact thermistor is abnormally high (250 deg C or more) for 500 msec continuously.	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.
0003	high reading, end thermistor; software The reading of the end thermistor is abnormally high (220 deg C or more) for 500 msec continuously.	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.
0004	difference in reading between end and center large The difference in readings of the non-contact thermistor and the end thermistor is 80 deg C or more for 500 msec continuously. thermistor error	Check the thermistor, and then reset using the following service mode: COPIER>FUNCTION>CLEAR>ERR.

Code	Description	Remedy
0005	foreign matter, non-contact thermistor The difference in readings of the non-contact thermistor and the end thermistor at the end of initial rotation is 20 deg C or more for 200 msec continuously. residual paper indicated fixing assembly/thermistor error	Check the inside of the fixing assembly for residual paper, and check the thermistor; then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0006	open-circuit, non-contact thermistor film The A/D value of the film side of the non-contact thermistor is FFh for 500 msec continuously. open-circuit in thermistor/disconnected connector	Check the thermistor for an open-circuit, and check for a disconnected connector; then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0007	short-circuit, non-contact thermistor film The A/D value of the film side of the non-contact thermistor is 30h or less for 500 msec continuously. short-circuit in thermistor	Check the thermistor, then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0008	open-circuit, no-contact thermistor case side The A/D value on the case side of the non-contact thermistor is FFh for 500 msec continuously. open-circuit in thermistor/disconnected connector	Check the thermistor for an open-circuit, and check for a disconnected connector; then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0009	short-circuit, non-contact thermistor case The A/D value on the case side and the A/D value of the film side of the non-contact thermistor is 0 deg C or more for 700 msec continuously. short-circuit in thermistor	Check the thermistor, and reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0010	open-circuit, end thermistor The A/D value on the case side of the contact thermistor is FFh for 500 msec continuously. open-circuit in disconnected/disconnected connector	Check the thermistor for an open-circuit, and reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0011	short-circuit in end thermistor The A/D value on the case is of the contact thermistor is 39h or less for 500 msec continuously. short-circuit in thermistor	Check the thermistor, and reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
E002	inadequate rise in temperature of the fixing unit	
0002	The reading of the non-contact thermistor reaches 50 deg C but does not reach 70 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.

Code	Description	Remedy
0003	The reading of the non-contact thermistor reaches 70 deg C but does not reach 100 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0004	The reading of the non-contact thermistor reaches 100 dg C but does not reach 120 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0005	The reading of the non-contact thermistor reaches 120 C deg but does not reach 140 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0006	The reading of the non-contact thermistor reaches 140 deg C but does not reach 160 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0007	The reading of the non-contact thermistor reaches 160 deg C but does not reach 180 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0008	The reading of the non-contact thermistor reaches 180 deg C but does not reach the standby temperature (normally, 190 deg c) within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0101	The reading of the non-contact thermistor does not reach 120 deg C within 300 sec after power-on.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
0102	The reading of the non-contact thermistor reaches 120 deg C but does not reach the standby temperature (normally 190 deg C) within 300 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
E003	low temperature error of the fixing unit after standby	
0001	The reading of the non-contact thermistor show a low temperature error (130 deg C or less) for 3.5 sec continuously after standby.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.
E004	protection circuit error of the fixing unit	
0001	A short-circuit is detected in the triac (for 1 sec or more continuously) while the heater remains off (hardware detection) for 40 msec continuously. fixing assembly triac malfunction/13V power supply error	Turn off and then on the main power supply.
E006	fixing unit connection error	

Code	Description	Remedy
0000	The fixing unit is identified as not being connected for 400 msec continuously (hardware detection). fixing unit present/absent signal open-circuit/ disconnected connector	Turn off and then on the main power supply.
E008	fixing roller life detection error	
0001	The reading of the fixing roller life counter has reached its upper limit.	Turn off the main power, and replace the fixing roller or the fixing assembly; then, set '0' to the following in service mode: COPIER>COUNTER>MISC>FX-UP-RL.
E010	main motor error	
0001	After the motor start-up, a lock state is not detected within 2 sec or more. excess load on feeding assembly	Turn off and then on the main power.
0002	An off-lock state is detected for 500 msec or more after motor stabilization rotation. excess load on feeding assembly	Turn off and then on the main power.
E012	drum motor error	
0001	After the motor goes on, a lock state is not detected within 2 sec. excess load on photosensitive drum	Turn off and then on the main power.
0002	After motor stabilization rotation, a motor unlock state is detected for 500 msec or more. excess load on photosensitive drum.	Turn off and then on the main power.
E013	ITB waste toner case full error	
0000	After the ITB waste toner case full sensor goes on, a job is executed for an equivalent of 500 images (in terms of small size).	Replace the waste toner case.
E014	fixing motor error	
0001	After the motor goes on, a lock state is not detected for 2 sec or more. excess load on fixing motor	Turn off and then on the main power supply.
0002	After motor stabilization rotation, a motor unlock state is detected for 500 msec or more. excess load on fixing motor	Turn off and then on the main power supply.

Code	Description	Remedy
E020	drum/developer-related error xx=01: Y xx=02: M xx=03: C xx=04: K xx=00: no color distinction	
XX10	For INIT control at time of initial setting, the SGNL value is lower than 62. damage on ATR sensor, soiling of ATR sensor window, poor developing assembly engagement, open-circuit in ATR sensor	Turn off and then on the main power.
XX11	For INIT control at time of initial setting, the REF value is lower than 62. damage on ATR sensor, open-circuit in ATR sensor	Turn off and then on the main power.
XX12	For INIT control at time of initial setting, the SGNL value is 960 or higher. damage to ATR sensor, malfunction of shutter, open-circuit in ATR sensor	Turn off and then on the main power.
XX13	For INIT control at time of initial setting, the REF value is 960 or higher. damage to ATR sensor, open-circuit in ATR sensor	Turn off and then on the main power.
XX50	For ATR control, a fault in the backup data during computation of density data based on the SGNL value and the REF value caused the REF value to go '0'.	check on backup data Turn off and then on the main power.
XX52	For ATR control, a fault in the backup data during computation of density data based on the SGNL value and the REF value caused the sensitivity coefficient to go '0'.	check on backup data Turn off and then on the main power.
XX81	When the background (drum surface) is read for patch detection, the value of P-SENS-P is lower than 255. error in sensor read value caused by soiling of patch image read sensor with toner	Turn off and then on the main power.
XX90	The result of computation based on patch readings in patch detection is lower than 16. damage to patch image read sensor, poor rotation of developing sleeve, poor engagement of developing assembly, poor stirring of toner inside developing assembly, damage to toner stirring screw or feedscrew	Turn off and then on the main power.

Code	Description	Remedy
XX91	The result of computation based on patch readings in patch detection is 1008 or higher. leakage from toner buffer inside developing assembly, damage to sensor	Turn off and then on the main power.
XX92	The result of computation based on 3 continuous patch readings in patch detection is lower than 42 for Y, M, and C and lower than 73 for Bk. damage to patch image read sensor, poor rotation of developing sleeve, poor engagement of developing assembly, poor stirring of toner inside developing assembly (damage to toner stirring screw or feedscrew)	Turn off and then on the main power.
XX93	The result of computation based on 3 continuous patch readings in patch detection is 52 or higher for Y, M, and C and 543 or higher for Bk. leakage from toner buffer inside developing assembly, damage to sensor	Turn off and then on the main power.
XXA0	For ATR control, the value of SGNL is lower than 62. damage to ATR sensor, soiling of ATR sensor window, poor developing assembly engagement, open-circuit in ATR sensor	Turn off and then on the main power.
XXA1	For ATR control, the value of REF is lower than 62. damage to ATR sensor, open-circuit in ATR sensor	Turn off and then on the main power.
XXA2	For ATR control, the value of SGNL is 960 or higher. damage to ATR sensor, malfunction of shutter, open-circuit in ATR sensor	Turn off and then on the main power.
XXA3	For ATR control, the value of REF is 960 or higher. damage to ATR sensor, open-circuit in ATR sensor	Turn off and then on the main power.
XXA8	For ATR control, the detected T/D ratio exceeds the upper limit (13%) 3 times continuously. leakage from toner buffer inside developing assembly	Turn off and then on the main power.
XXA9	For ATR control, the detected T/D ratio exceeds the lower limit (3%) 3 times continuously.	Turn off and then on the main power.
E021	developing assembly error	

Code	Description	Remedy
0001	The developing rotary home position cannot be detected. error in HP sensor, fault in DC controller PCB, poor torque caused by excess load on developing assembly	Turn off and then on the main power.
0002	The timing at which the flag goes on is too early with the developing rotary rotating, or is too late. error in HP sensor, flat in DC control PCB wiring, poor torque caused by excess load on developing assembly	Turn off and then on the main power.
0003	The sensor does not detect the flag when a stop is made at the position of developing rotary. error in HP sensor, fault in DC controller PCB writing, poor torque caused by excess load on developing assembly.	Turn off and then on the main power.
E026	toner absent error xx=01: Y xx=02: M xx=03: C xx=04: K	
xx01	The toner concentration does not return to a normal level after replacement of the toner bottle and 5 toner recovery sessions following the detention of the absence of toner. Some users tend to fit an empty toner bottle and cause the machine to execute a toner recovery session, causing the carrier to fly astray and damaging the ITB.	Turn off and then on the main power, and fit a new toner bottle.
E032	NE controller counter failure	
0001	A break is detected in the count pulse signal.	Turn off the main power, and check the cable for an open-circuit; then, turn the power back on.
E045	transparency sensor error	
0001	A sampling is taken in the absence of an obstacle during initial multiple rotation; the sampling data indicates a level lower than a specific level.	Turn off and then on the main power.
E067	high-voltage-related error	
0100	The current measured of the primary transfer ATVC is faulty 2 times in succession.	Turn off and then on the main power.

Code	Description	Remedy
0110	The computed voltage of the primary transfer ATVC is faulty 2 times in succession.	Turn off and then on the main power.
E070	ITB HP detection error	
0001	The ITB home position is not detected within a specific period of time. error in HP sensor, full displacement of belt, soiling of seal	Turn off the main power, and check the ITB-HP sensor; then, turn the main power back on.
0002	The time that passes after detection of the ITB home position to the next detection of the home position is longer than a specific period of time. slippage of belt against roller, causing delay in HP detection timing	Turn off the main power, and check the drive of the ITB; then, turn the main power back on.
0003	The time that passes after detection of the ITB home position to the next detection of the home position is shorter than a specific period of time. rear in ITB, causing sensor to wrongly detect home position	Turn off the main power, and check the surface of the ITB for scars; then, turn the main power back on.
E100	BD error	
0001	After the polygon scanner goes on, a speed lock state does not occur for BD speed control within 5 sec.	Turn off the main power, and check the DC controller PCB wiring and the 24-V system fuses; then, turn the main power back on.
0002	While the polygon scanner is rotating at a constant speed, the speed clock for BD speed control goes off.	Turn off the main power, and check the DC control PCB wiring and the 24-V fuses; then, turn the main power back on.
0003	While the polygon scanner is rotating at a constant speed, the phase lock for BD phase control goes off.	Turn off the main power, and check the DC controller PCB wiring and the 24-V system fuses; then, turn the main power back on.
0004	After the polygon scanner goes on, the phase lock does not go on for BD phase control within 6 sec.	Turn off the main power, and check the DC controller PCB wiring and the 24-V system fuse; then, turn the main power back on.
E110	laser scanner motor operation error	
0001	After the polygon scanner goes on, the speed lock for FG speed control does not go on within 5 sec.	Turn off the main power, check the DC controller PCB wiring and the 24-V system fuses; then, turn the main power back on.
E202	CIS unit HP detection error	

Code	Description	Remedy
0001	The HP sensor does not go on after the unit is moved in reverse for a specific length/period.	Disconnect and then connect the harness connectors; as necessary, replace the scanner HP sensor, scanner motor, and reader controller PCB.
0002	The HP sensor does not go off after the unit is moved forward for a specific length/period.	Disconnect and then connect the harness connector; as necessary, replace the scanner HP sensor, scanner motor, and reader controller PCB.
E225	CIS light intensity error	
0001	At time of power-on or at the start of a job, the machine cannot find out whether the lamp has gone on normally for shading correction.	Disconnect and connect the harness connectors; as necessary, replace the scanning lamp (xenon tube), CIS, inverter PCB, and reader controller PCB.
E227	reader power supply error	
0001	At time of power-on, the 24V port is off.	Disconnect and connect the power supply harness connector; as necessary, replace the power supply.
0002	At the start of a job, the 24V port is off.	Disconnect and then connect the power supply harness; as necessary, replace the power supply.
0003	At the end of a job, the 24V port is off.	Disconnect and then connect the power supply harness; as necessary, replace the power supply.
0004	When a load is driven, the 24V port is off.	Disconnect and connect the power supply harness; as necessary, replace the power supply.
E240	communication error between main controller and DC controller	
0000	An error occurred in the serial communication between the main controller and the DC controller.	
0002	While printing is under way, no response arrives from the DC controller within a specific period of time.	
E243	control panel error	

Code	Description	Remedy
0000	An error occurred in the communication between the controller and the control panel.	Turn off the main power, and check the connectors between the main controller PCB and the control panel for connection; then, turn the main power back on.
E248	backup memory error	
0000	check error on backup SRAM board at time of start-up	Turn off the main power, and check the backup SRAM PCB for connection or replace the backup SRAM PCB; then, turn the main power back on.
0001	error on reader controller EEPROM at power-on	Replace the reader controller PCB.
0002	write error in reader controller EEPROM	Replace the reader controller PCB.
0003	reader error in reader controller EEPROM after check error wire operation	Replace the reader controller PCB.
E315	image data error (fault in image conversion board, SDRAM, or HDD; or, poor connection)	
0008	The ASIC on the Resolution switching board is faulty. time-out error at time of encoding (no response within 30 sec)	
000e	data damage/memory HDD error software decoding error	
0010	The ASIC on the Resolution switching board is faulty. time-out error at time of decoding	
0025	The ASIC on the Resolution switching board is faulty. image data transfer error at time of rotation processing	
0028	The ASIC on the Resolution switching board is faulty. time-out error at time of rotation processing	
0034	The ASIC on the main controller PCB is faulty. image data transfer error at time of magnification processing	
0036	The ASIC on the Resolution switching board is faulty. time-out error rat time of magnification processing	
E351	ECO PCB error	

Code	Description	Remedy
0000	communication error between ECO PCB and main controller PCB at start-up	Turn off the main power, and check the main controller PCB (main, sub); then, turn the main power back on.
E400	feeder communication error	
0001	data communication error check sum error	Disconnect and then connect the connector; as necessary, replace the reader controller PCB and the DC controller of the ADF.
0002	reception status error	Disconnect and connect the connector; as necessary, replace the reader controller PCB and the DC controller PCB of the ADF.
0003	reception interrupt error	Disconnect and then connect the connector; as necessary, replace the reader controller PCB and the DC controller PCB of the ADF.
E490	wrong model error	
0001	model ID mismatch A feeder for a different model is connected.	Use an ADF designed for the machine.
E500	finisher communication error (common among finishers)	
0001	data communication error In the communication between the machine and the finisher, an error has been detected for a specific number of times and for a specific period of time.	Turn off the main power, and check the DC controller PCB, finisher PCB wiring, and 24V system fuses; then, turn the main power back on.
E503	finisher internal communication error (Finisher-Q1/Q2)	
0002	data communication error error in communication between finisher and saddle unit	
0003	error in communication between finisher and punch unit	
E505	backup memory error of finisher (Finisher-P1)	
0001	an error has occurred in the data stored in the backup memory.	Turn off the main power, and check the DC controller PCB, finisher PCB wiring, and 24V system fuses; then, turn the main power back on.
E505	backup memory error of finisher (Finisher-Q1/Q2)	

Code	Description	Remedy
0001	An error has occurred in the data stored in the backup memory.	Turn off the main power, and check the DC controller PCB, finisher PCB wiring, and 24V system fuses; then, turn the main power back on.
0002	punch unit EEPROM data error	
E514	stack delivery error (Finisher-P1)	
0001	when the return belt is moved to HP, the HP sensor does not go on within 1500 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit to the function.
0002	When moving the return belt to the belt contact position, the HP sensor does not go off within 1500 msec after the start of the operation.	Turn off the main power, and check the finisher PCB and the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit to the function.
E514	rear end assist motor error (Finisher-Q1/Q2)	
0001	The HP sensor does not go off after the rear end assist motor has rotated for a specific period of time.	
0002	The HP sensor does not go on after the rear end assist motor has rotated for a specific period of time.	
E519	gear change motor error (Finisher-Q1/Q2)	
0001	The HP sensor does not go off after the gear change motor has rotated for a specific period of time.	
0002	The HP sensor does not go on after the gear change motor has rotated for a specific period of time.	
E530	rear alignment error (Finisher-P1)	
0001	When the rear aligning plate is being moved to home potion, the HP sensor does not go on within 2000 msec after the start of the operation.	Turn off and then on the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit on the function.

Code	Description	Remedy
0002	When the rear aligning plate is being moved to home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses: then, turn the main power back on. A shift may be made to mode that puts a limit to the function.
E530	front aligning plate error (Finisher-Q1/Q2)	
0001	The HP sensor does not go off after the front alignment motor has rotated for a specific period of time.	
0002	The HP sensor does not go on when the front alignment motor has rotated for a specific period of time.	
E531	staple error (Finisher-P1)	
0001	At time of staple jam recovery, the HP sensor does not go on within 500 msec after the start of the reversal rotation of the stapler motor.	Turn off the main motor, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit to the function.
0002	The HP sensor does not go off within 500 msec after the start of the stapler motor operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit to the function.
E531	stapler error (Finisher-Q1/Q2)	
0001	The HP sensor does not go off after the stapler motor has rotated for a specific period of time.	
0002	The HP sensor does not go on after the stapler motor has rotated for a specific period of time.	
E532	stapler relocation error (Finisher-P1)	
0001	When the stapler unit is being moved to binding home position, the HP sensor does not go on within 1100 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit to the function.

Code	Description	Remedy
0002	While the stapler unit is being moved from home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit to the function.
E532	stapler relocation error (Finisher-Q1/Q2)	
0001	The HP sensor does not go off after the stapler relocation motor has rotated for a specific period of time.	
0002	The HP sensor does not go on after the stapler relocation motor has rotated for a specific period of time.	
E535	swing error (Finisher-P1)	
0001	When the swing arm is moved to home position, the HP sensor does not go on within 2000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB and the 24V system fuses; then, turn on the main power back on.
0002	When the swing arm is moved from the home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.
E535	swing error (Finisher-Q1/Q2)	
0001	The HP sensor does not go off after the swing motor has rotated for a specific period of time.	
0002	The HP sensor does not go off after the swing motor has rotated for a specific period of time.	
0003	hazardous area	
E537	front alignment error (Finisher-P1)	
0001	When the front aligning plate is moved to home position, the HP sensor does not go on within 2000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit to the function.

Code	Description	Remedy
0002	When the front aligning plate is moved from home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit to the function.
E537	rear alignment error (Finisher-Q1/Q2)	
0001	The HP sensor does not go off after the swing motor has rotated for a specific period of time.	
0002	The HP sensor does not go on after the swing motor has rotated for a specific period of time.	
E540	stack tray ascent/descent error (Finisher-P1)	
0002	A paper surface search does not end within 1000 msec.	Turn of the main power, and check the finisher PCB wiring and the 24V system wiring; then, turn the main power back on. A shift may be made to mode that puts a limit to the function.
0003	In the course of a paper surface search, the encoder lock signal within 200 msec does not reach 10 pulses.	Turn off the main power, and check the finisher PCB wiring an the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit to the function.
0004	In the course of a paper surface search, an error is found in the input of the paper upper surface, paper power surface, tray upper limit, or tray lower limit sensor.	Turn off the main power, and correct the stack tray position; then, check the finisher PCB wiring and the 24V system fuses, and turn the main power back on. A shift may be made to mode that puts a limit to the function.
E540	upper tray ascent/descent error (Finisher-Q1/Q2)	
0001	upper tray ascent/descent motor clock error	
0002	area error	
0003	safety switch activation	
E542	lower tray ascent/descent error (Finisher-Q1/Q2)	
0001	lower try ascent/descent motor clock error	
0002	area error	

Code	Description	Remedy
0003	safety switch activation	
E577	paddle error (Finisher-P1)	
0001	When the paper retaining paddle is moved to home position, the HP sensor does not go on within 1500 msec after the start of the operation.	Turn off the main power, and check the finisher PCB and the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit on the function.
0002	When the paper retaining paddle is moved from home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn the main power off, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on. A shift may be made to mode that puts a limit on the function.
E580	stack tray ascent/descent error	
	faulty stack tray ascent motor (M5), stack tray power height sensor (S10), stack tray ascent/descent motor clock sensor (S9); disconnected connector; error load on stack tray ascent/descent motor While the stack tray decent/decent motor is in operation, the stack tray upper limit sensor goes on; or, within 0.8 sec, the clock signal of the stack tray direction motor clock sensor is not detected 15 times or more. After the stack tray ascent/descent motor has started ascent operation, the tray does not reach the stack tray height sensor within 4 sec; or, the tray does not leave the height sensor.	
E584	shutter unit error (Finisher-Q1/Q2)	
0001	The shutter open sensor does not go off (i.e., the shutter does not close).	
0002	The shutter open sensor does not go on (i.e., the shutter does not open).	
0003	hazardous area	
E590	punch motor error (punch unit)	
0001	HP detection error	
0002	initial	

Code	Description	Remedy
E591	punch dust sensor error (punch unit)	
0001	error light reception voltage when the light emitter is on	
0002	error light reception voltage when the light emitter is off	
E592	punch horizontal registration sensor error (punch unit)	
0001	error light reception voltage when the light emitter is on (rear end sensor)	
0002	error light reception voltage when the light emitter is off (rear end sensor)	
0003	error light reception voltage when the light emitter is on (horizontal registration sensor 1)	
0004	error light reception voltage when the light emitter is off (horizontal registration sensor 1)	
0005	error light reception voltage when the light emitter is on (horizontal registration sensor 2)	
0006	error light reception voltage when the light emitter is off (horizontal registration sensor 2)	
0007	error light reception voltage when the light emitter is on (horizontal registration sensor 3)	
0008	error light reception voltage when the light emitter is off (horizontal registration sensor 3)	
0009	error light reception voltage when the light emitter is on (horizontal registration sensor 4)	
000A	error light reception voltage when the light emitter is off (horizontal registration sensor 4)	
E593	punch relocation motor error (punch unit)	
0001	When the light emitter is on, the light reception voltage HP sensor does not go off.	
0002	When the light emitter is off, the light reception voltage HP sensor does not go on.	
E5F0	saddle paper positioning error	

Code	Description	Remedy
0001	The paper positioning plate HP sensor does not go on within 1.33 sec after the paper positioning plate motor is driven. paper positioning plate motor (M4S), paper positioning plate HP sensor (PI7S)	
0002	The paper position plate HP sensor does not go off within 1 sec after the paper positioning plate motor is driven for 1 sec. paper positioning plate motor (M4S), paper positioning plate HP sensor (PI7S)	
E5F1	saddle paper folding error	
0001	The number of detection pulses of the paper fold motor clock sensor drops below a specific value. paper fold motor (M2S), paper fold motor clock sensor (PI4S)	
0002	The start of the paper fold HP sensor does not change within 3 sec after the paper fold motor is driven. paper fold motor (M2S), paper fold motor clock sensor (PI4S)	
E5F2	saddle guide error	
0001	The guide HP sensor does not go on within 0.455 sec after the guide motor is driven. guide motor (M3S), guide HP sensor (PI3S)	
0002	The guide HP sensor dose not go off within 1 sec after the guide motor is driven. guide motor (M3S), guide HP sensor (PI3S)	
E5F3	saddle alignment error	
0001	The aligning plate HP sensor does not go on within 0.5 sec after the alignment motor is driven. (at time of initialization, 1.67 sec) alignment motor (M5S), aligning plate HP sensor (PI5S)	

Code	Description	Remedy
0002	The aligning plate HP sensor does not go off within 1 sec after the alignment motor is driven. alignment motor (M5S), aligning plate HP sensor (PI5S)	
E5F4	saddle rear stapler error	
0001	The stitching operation HP sensor does not go on when the switch motor (rear) is driven in reverse for 0.5 sec or more. stitch motor (rear; M6S), switching HP sensor (rear, MS5S)	
0002	The stitching HP sensor does not go off when the switch motor (rear) is driven in normal direction for 0.5 sec or more. switch motor (rear, M6S), stitching HP sensor (rear, MS5S)	
E5F5	saddle front stapler error	
0001	The stitching HP sensor does not go on when the switch motor (front) is driven in reverse for 0.5 sec or more. switch motor (front, M7S), stitching HP sensor (front, MS7S)	
0002	The stitching HP sensor does not go off when the stitch motor (front) is driven in normal direction for 0.5 sec or more. switch motor (front, M7S), stitching HP sensor (front, MS7S)	
E5F6	saddle butting error	
0001	The paper pushing plate HP sensor does not go on when the paper pushing motor is driven for 0.3 sec or more. paper pushing plate motor (M8S), paper pushing plate HP sensor (PI14S)	

Code	Description	Remedy
0002	The paper pushing plate HP sensor does not go off when the paper pushing plate motor is driven for 80 msec or more. paper pushing plate motor (M8S), paper pushing plate HP sensor (PI14S)	
0003	The number of detection pulses of the paper pushing plate motor clock sensor drops below a specific value. paper pushing plate motor (M8S), paper pushing plate motor clock sensor (PI1S)	
0004	The paper pushing plate leading edge sensor does not go off when the paper pushing plate motor is driven for 80 msec or more. paper pushing plate motor (M8S), paper pushing plate leading edge sensor (PI15S)	
0005	The paper pushing plate leading edge sensor does not go on when the paper pushing motor is driven for 0.3 sec or more. paper pushing plate motor (M8S), paper pushing plate leading edge sensor (PI15S)	
E5F8	saddle connector error	
0001	The connector of the guide HP sensor is identified as being disconnected. connector of guide HP sensor (PI13S)	
0002	The connector of the paper pushing plate HP sensor is identified as being disconnected. connector of paper pushing plate HP sensor (PI4S)	
0003	The connector of the paper pushing plate leading edge sensor is identified as being disconnected. connector of paper pushing plate leading edge sensor (PI5S)	
E5F9	saddle switch error	

Code	Description	Remedy
0001	The inlet cover switch is identified as being open for 1 sec or more after the start of printing or after the start of initial rotation of the host machine with the cover identified by the following sensor as being closed: - inlet cover sensor (PI9S) - front cover open/closed sensor (PI2S) - delivery cover sensor (PI3S) or, the front cover switch (MS2S) or the delivery cover switch (MS3S) is open. inlet cover switch (MSIS), front cover switch (MS2S), delivery cover switch (MS3S)	
0002	The front cover switch is identified as being open for 1 sec or more after the start of printing or after the start of initial rotation of the host machine with the cover identified by the following sensor as being closed: - inlet cover sensor (PI9S) - front cover open/closed sensor (PI2S) - delivery cover sensor (PI3S) front cover switch (MS2S), delivery cover switch (MS3S)	
0003	The delivery cover switch is identified as being open for 1 sec or more after the start of printing or after the start of initial rotation of the host machine with the cover identified by the following sensor as being closed: - inlet cover sensor (PI9S) - front cover open/closed sensor (PI2S) - delivery cover sensor (PI3S) delivery cover switch (MS3S)	
E601		
0000	communication error in image memory (SDRAM)	
E602	hard disk error	
E604	image memory (SDRAM) shortage	
0000	The machine does not recognize an amount of memory needed for the model in question.	
E605	image memory battery fault	

Code	Description	Remedy
0000	The machine has detected a drop in the voltage (below a specific level).	
E606	hard disk error	
0001	The machine has detected a mount error on the HD at time of a boot from the boot ROM.	
0002	The machine has detected a read error when booting the HD from the boot ROM.	
E674	fax board error	
0001	The machine has recognized the fax board, but it cannot communicate with it.	Turn off the main power, and check the connection between the fax board and the main controller PCB; then, turn the main power back on. If the fault is not corrected, replace the fax board or the main controller PCB.
E677	external controller fault	
0003	fault in EFI controller The machine has detected a fault during a configuration check when starting up an EFI controller.	Turn off the main power, and check the connection cable; then, turn the main power back on. If the fault is not corrected, reinstall the system software of the EFI controller.
0010	A controller designed for a different model is connected.	Turn off the main power, and check to see if the controller is one designed for the model and check the connector cable; then, turn the main power back on. If the fault is not corrected, reinstall the system software of the EFI controller.
0080	The external controller has started up normally, but the machine has detected an error in the communication with the printer unit.	Turn off the main power, and check the cable; then, turn the main power back on. If the fault is not corrected, reinstall the system software of the EFI controller.
E710	IPC initialization error	
0001	The machine does not become ready 3 sec after starting up the IPC chip.	Turn off the main power, and check the cable; then, turn the main power back on.
E711	IPC communication error	

Code	Description	Remedy
0001	data communication error An error is recorded in the IPC chip error register 4 times or more within 1.5 sec. fault in ADF controller/reader controller PCB; poor connection of connector between reader and DADF	Turn off the power, and check the cable; then, turn the power back on.
0002	IPC communication error An error is detected but cannot be corrected within 1.5 sec after the communication between the finisher and the printer is suspended. error in data communication; fault in finisher controller PCB, DC controller PCB; poor connection of connector	Turn off the main power, and check the cable; then, turn the power back on.
E712	error in communication between ADF and reader unit	
	The communication between the reader unit and the ADF has stopped, and 5 sec or more has passed without recovery.	
E713	error in communication between finisher and printer	
	error in data communication; fault in fisher controller PCB, DC controller PCB The communication between the machine and the finisher is disrupted.	Turn off the power, and check the cable; then, turn the power back on.
E716	error in communication between cassette pedestal and printer unit	
0000	error in data communication; fault in deck controller or cassette pedestal controller PCB The communication between the cassette pedestal and the machine stopped, and 2 sec or more has passed without recovery.	
E717	error in communication with NE controller	
0000	The communication stopped with the NE controller, and is not resumed within 3 sec.	
0001	The machine does not recognize the NE controller that was connected before its power was turned off.	Reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.
0002	The IPC has an open-circuit, and the machine cannot correct the error in the IPC.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.

Code	Description	Remedy
E719	error in communication with coin vendor/card reader	
0000	The machine does not recognize the presence of a coin vendor at time of start-up.	
0001	When the power is turned on, the machine does not recognize the presence of the coin vendor that was connected before the power was turned off.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.
0002	The IPC cable connected to the coin vendor has an open-circuit. The machine cannot recover IPC communication. The machine has detected an open-circuit in the pickup/delivery signal. The machine has detected an illegal connection (short-circuit in Tx and Rx of IPC)	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.
0011	When the power is turned on, the machine does not recognize the card reader that was connected before the power was turned off.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.
0012	The machine has detected an open-circuit in the IPC cable connected to the card reader, and the machine cannot recover the communication.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.
E730	PDL error	
1001	PDL software error The machine has detected an initialization error at the start of a job.	Execute a PDL reset, or turn off and then on the main power.
100A	PDL software error While processing a job, the machine failed to release the semaphore; the machine has detected a system error (e.g., initialization error).	Execute a PDL reset, or turn off and then on the main power.
100B	PDL master font error At time of start-up, the machine detected a mismatch between the version number indicated in the master font control file and the bootable version. The machine does not detect the presence of master font control file in /BOOTEV.	Execute a PDL reset, or turn off and then on the main power. If the fault is not corrected, reinstall the appropriate font file, or format and reinstall all system software.

Code	Description	Remedy
9004	open I/F communica-tion error The machine has detected a PAI error in the communication with the EFI controller.	Turn off the main power, and check the open I/F board and the cable for connection; then, turn the main power back on. If the fault is not corrected, replace the EFI controller, open I/F PCB, or main controller PCB.
9005	The machine has detected a fault in the video cable connected to the EFI controller. Turn off the main power, and check the open I/F board and the cable for connection; then, turn the main power back on.	Turn off the main power, and check the open I/F board and the cable for connection; then, turn the main power back on. If the fault is not corrected, replace the EFI controller, open I/F PCB, or main controller PCB.
A006	PDL communica-tion error PDL does not respond. PDL does not respond because of a fault in the sub bootbable program, the absence of a sub bootable program, or fault in RIPA.	Execute a PDL reset; or, turn off the main power, check the SURF2 board for connection, and turn the main power back on. If the fault is not corrected, reinstall the firmware, or replace the main controller PCB.
A007	PDL version mismatch At time of start-up, the machine detected a mismatch in the versions between the machine's control software and the PDL control software.	Execute a PDL reset, or turn off and then on the main power. If the fault is not corrected, format and reinstall all system software.
B013	PDL built-in font error At time of start-up, the machine detected damage in the font data.	Turn off and then on the main power. If the fault is not corrected, format and reinstall all system software.
E731	UFR board error	
3000	UFR board error At time of start-up, the machine does not recognize the presence of a UFR1 board.	Turn off the main power, and check the connection of the UFR2 board; then, turn the main power back on. If the fault is not corrected, replace the UFR2 board or the main controller PCB.

Code	Description	Remedy
3001	The machine cannot initialize the UFR board. At time of startup, the machine failed to initialize UFR1.	Turn off the main power, and check the UFR2 board; then, turn the main power back on. If the fault is not corrected, replace the UFR2 board or the main controller PCB.
3002	The machine cannot initialize the RAM bus.	
3015	No image data arrives at the main controller PCB. The machine's software is free of a fault when processing a job; however, video data fails to arrive at CL1-G.	Turn off and then on the main power. If the fault cannot be corrected, replace the UFR2 board or the main controller PCB.
E732	reader communication error	
0001	DDI-S communica-tion error	Turn off the main power, and check the connectors used to connect to the reader unit; then, check the reader power supply, and turn the main power back on.
9999	On a printer model, a reader unit has been detected at time of start-up. (A copier model starts up once as a printer model at time of RAM initialization.) The indication on the machine is limited to "Turn On the Power."	Turn off and then on the main power.
E733	printer communication error	
0000	printer communica-tion error At time of start-up, the machine cannot detect the presence of a printer unit.	Turn off the main power, and check the connectors used to connect the DC controller PCB and the main controller PCB; then, check the power supply of the printer unit, and turn the main power back on.
0001	DDI-P communica-tion error	Turn off the main power, and check the connectors used to connect the DC controller PCB and the main controller PCB; then, check the power supply of the printer unit, and turn the main power back on.
E740	Ethernet board error	
0002	At time of start-up, the MAC address proves to be illegal. The machine has detected a non-Canon MAC address.	Turn off the main power, and replace the NIC; then, turn the main power back on.

Code	Description	Remedy
E743	DDI communication error	
	The reader controller PCB has detected an error in communication between the main controller PCB an the reader controller PCB.	Disconnect and then connect the DDI-S cable connector; replace the reader controller PCB or the main controller PCB.
E744	language file/boot ROM error	
0001	The language version stored on the HDD and the bootable ROM version are different from each other.	Download a language file with the correct version using the service support tool.
0002	The size of the language file on the HDD is too large.	Download a language file with the correct version using the service support tool.
0003	The machine cannot find a language file specified by config.txt stored on the HDD. The machine cannot switch over to a language file stored on the HDD.	Download a language file with the correct version using the service support tool.
0004	The machine cannot switch power to a language file stored on the HDD.	
0005	The boot ROM mounted in the machine is one designed for a different model.	
1000	boot ROM project error The boot ROM connected to the machine is one designed for a different model.	Turn off the main power, and replace the boot ROM with an appropriate one; then, turn the main power back on.
3000	illegal boot ROM module version At time of start-up, the boot ROM is identified as not being able to operate normally.	Upgrade the boot ROM, or replace it.
E745	TokenRing board error	
0001	When initializing the TokeRing driver, the machine failed to initialize the PCI.	Turn off the main power, and check the connector of the TokenRing board; then, replace the TokenRing, and turn the main power back on.
0002	faulty MAC address When initializing the TokenRing driver, the machine found that the MAC address was faulty.	Turn off the main power, and replace the TokenRing board; then, turn the main power back on.

Code	Description	Remedy
0003	The machine cannot obtain board information. When initializing the TokeRing driver, the machine suffered an error in obtaining/setting up the board information.	Turn off the main power, and replace the TokenRing board; then, turn the main power back on.
0004	connector error When starting up the TokeRing driver, the machine suffered a connection error.	Turn off the main power, and check the cable connection and the power supply of the MAU; then, turn the main power back on.
0005	TBD	
E746	wrong accessories board	
0003	At time of start-up, the machine detected a UFR board designed for a different model. The machine checks the engine ID to see if it is a correct one.	Replace the UFR board with an appropriate one.
0004	At time of start-up, the machine detects a scanner board designed for a different model. The machine checks the engine ID to see if it is a correct one.	Replace the scanner board with an appropriate one.
E747	error in image processing ASIC or memory control/communication control ASIC	
---	The machine has detected an error (e.g., image data transfer error) in IC1015 (image processing ASIC) or IC1012 (memory control/communication ASIC; CPU) of the main controller PCB.	Turn off the main power, and check the main controller PCB; then, turn the main power back on.
E803	door closed error	
0001	The machine detected a remote (+24V) OFF state immediately after the door is closed. fault in interlock; short-circuit in 24V system; other fault in power supply; open-circuit around power supply; blown fuse	Turn off the main power, and check the DC controller PCB and the presence/absence of a fault in the interlock; then, turn the main power back on.
0002	The machine detects a remote (+13V) OFF state immediately after the door is closed. fault in interlock; open-circuit in 13V system; other fault in power supply; open-circuit around power supply	Turn off the main power, and check the DC controller PCB wiring and the presence/absence of a fault in the interlock; then, turn the main power back on.
E804	controller fan error	

Code	Description	Remedy
0004	The machine has detected that the controller fan remained at rest for 16 sec continuously.	Turn off the main power, and check the power to the fan or replace the fan; then, turn the main power back on.
E805	fan error	
0001	With the exhaust fan (front) in operation, the machine does not detect a lock state for 5 sec continuously. disconnected fan connector; absence of lock signal because of fault in fan	Turn off the main power, and check the DC controller PCB; then, turn the main power back on.
0002	With the exhaust fan (rear) in operation, the machine does not detect a lock state for 5 sec continuously. disconnected fan connector; absence of lock signal because of fault in fan	Turn off the main power, and check the DC controller PCB wiring; then, turn the main power back on.
0003	With the ITB fan in operation, the machine does not detect a lock state for 5 sec continuously. disconnected fan connector; absence of lock signal because of fault in fan	Turn off the main power, and check the DC controller PCB; then, turn the power back on.
0004	With the fan and the toner fan in operation, the machine does not detect a lock state for 5 sec continuously. disconnected fan connector; absence of signal because of fault in fan	Turn off the main power, and check the DC controller PCB wiring; then, turn the main power back on.

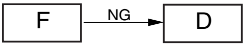
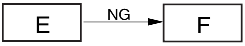
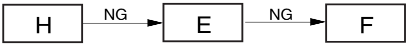
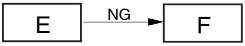
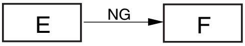
<E602 in detail>

If the machine indicates E602-xxyy, it requires different approaches as indicated by its suffix (detail code).

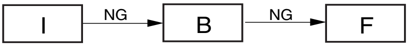
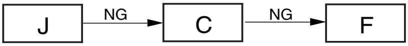
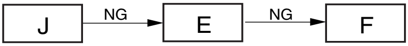
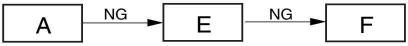
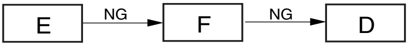
⚠**If the machine indicates E602-xxyy, be sure to turn off and then on the main power once (so that the machine will execute automatic recovery sequence).**

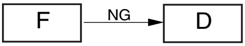
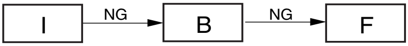
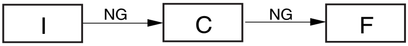
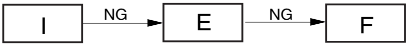
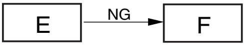
T-14-3

xx	Partition	yy	Description
00	entire HDD	01	The machine cannot recognize the HDD. The machine cannot find BOOTDEV at start-up.

xx	Partition	yy	Description
			Remedy: Turn off the main power, and check the 2 types of cables (power, IDE) that come from the HDD for connection; then, turn the main power back on. 
		02	The machine cannot find the system software for the main controller (main) CPU in BOOTDEV. Remedy: 
		03	The machine detects a faulty read sector while it reads data from BOOTDEV. Remedy: 
		06	The machine cannot find system software for the main controller (sub) CPU in BOOTDEV. Remedy: 
		07	The machine cannot find appropriate ICCProfile in BOOTDEV/ PDLDEV. Remedy: 

T-14-4

xx	Partition	yy	Description
01	DOSDEV	01, 02	The machine has detected a read error or a file system error at start-up. Remedy:  - in the case of xxyy = 0701, 0702 Remedy: Ask the user to collect address book data, transfer settings, and user mode data using the remote UI.  - in the case of xxyy = 0801, 0802 Remedy:  - in the case of xxyy = FF01, FF02 Remedy: 
02	FSTDEV		
03	DOSDEV2		
04	FSTPDEV		
05	DOSDEV3		
06	PDLDEV		
07	DOSDEV4		
08	BOOTDEV		
09	DOSDEV5		
FF	not specified		
		03	The system has detected an HDD contact fault or an operation system error. Remedy: Turn off the main power, and check the 2 types of cables (power supply, IDE) that come from the HDD for connection; then, turn the main power back on. At that time, check to see if the HDD is rotating and that power is being supplied. 
		11, 21	The machine detected an HDD contact fault.

xx	Partition	yy	Description
			Remedy: Turn off the main power, and check the 2 types of cables (power supply, IDE) for connection; then, turn the power back on. At that time, check to see that the HDD is rotating and power is being supplied. 
		13, 25	The machine has detected a read error. Remedy:  - in the case of xxyy = 0713, 0725 Remedy:  - in the case of xxy = 0813, 0825 Remedy: 
		10, 12, 14, 22, 23, 24	The machine has detected a system error or a packet data error. Remedy: 

A:

1) Make the following selections, and enter '0': COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK*.
3) When done, turn off and then on the main power.

B:

1) By referring to [HDD format], make the following selections, and enter the appropriate value: COPIER>FUNCTION>SYSTEM>CHK-TYPE.

2) Make the following selections, and press the OK key: COPIER>FUNCTION>SYSTEM>HD-CLEAR.

3) When done, turn off and then on the main power.

C:

1)** Start up the machine in normal mode (i.e., turn on the main power while holding down the 1 and 7 keys); then, make the following selections, and press the OK key: COPIER>FUNCTION>SYSTEM>DOWNLOAD.

2) Execute DOSDEV4 using the SST (formatting).

3) When done, turn on and then off the main power.

D:

1) Replace the main controller (main) board.

2) Remove the image memory (SDRAM) and the boot ROM from the older board, and mount them to the new board.

E:

1)** Start up the machine in safe mode (i.e., turn on the main power while holding down the 2 and 8 keys).

2) Format the HDD (ALL) and download the system software (SYSTEM, LANG, RUI) using the SST.

3) When done, turn off and then on the main power.

F:

1)** Replace the HDD, and start up the machine in safe mode (i.e., turn on the main power while holding down the 2 and 8 keys).

2) Format the HDD (ALL) and download the system software (SYSTEM, LANG, RUI) using the SST.

3) When done, turn off and then on the main power.

G:

1) Make the following selections, and enter '1': COPIER>FUNCTION>SYSTEM>CHK-TYPE.

2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CLEAR.

3) When done, turn off and then on the main power.

H:

1) Turn off the main power, and press the 1 and 9 keys to turn it back on (so that the machine will automatically start its recovery program*, turning the control panel to go fully black).

2) When done (i.e., when the screen has turned fully white), turn off and then on the main

power.

⚠If the machine does not start its recovery program in response to the foregoing operation, go to E.

I:

1) By referring to [HDD format], make the following selections, and enter an appropriate value: COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK*.
3) When done, turn off and then on the main power.

J:

1) Make the following selections, and enter '4': COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK (1 to 5 min).
3) When done, turn off and then on the main power.

* Takes about 30 to 50 min.

** As necessary, ask the user to collect address book data, transfer settings, and user mode data in advance using the remote UI.

T-14-5

- HDD Format

Partition	CHK-TYPE	Data deleted
DOSDEV	1	all image-related data (reservations, Box, fax), mode memory, routine task button
FSTDEV	1	
DOSDEV2	1	
FSTPDEV	1	
DOSDEV3	2	PDL spool
PDLDEV	3	PDL-related file (font, registration from, ICCProfile, etc.)

- HDD Format

Partition	CHK-TYPE	Data deleted
DOSDEV4	4	user data (address book, transfer settings), system software
BOOTDEV	4	
DOSDEV5	5	-
not specified	0	-

14.3 Error Codes (SEND)

14.3.1 Self-Diagnostic Display

T-14-6

Cause	Remedy
Scanning has stopped because the size of the data for the scanned original exceeds the limit. Scanning may be possible if [Data Cmprssn] is set to [High Ratio], Resolution is lowered, or [Sharpness] is reduced.	
Scanning was stopped because the data size of the scanned original exceeded the maximum data size that the machine could handle.	By selecting [High Ratio] for Data Compression Ratio, lowering the Resolution, and lowering the Sharpness setting, scanning may become possible.
Out of resources. Wait for a moment, then perform operation again.	
You cannot browse the network. There is a lack of TCP/IP resources because documents have just been continuously sent or are being continuously sent through FTP or Windows (SMB).	Wait for a while, and try browsing again.
Set the IP Address.	
This machine is not set with an IP address.	Specify the IP Address Settings in TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen), then turn the machine's main power OFF and back ON again.
No response from the server. Check the settings.	
The specified server settings are incorrect, or the server is not turned ON. Alternatively, the machine's TCP/IP resources may be low.	Wait for a while, and try browsing again. If there is still no response from the server, try selecting another server.
NetWare is in use. Wait for a moment, then perform operation again.	
You cannot browse the network because NetWare is printing through a Pserver or NDS PServer.	Wait until printing is complete, then try browsing again.
There are too many subdirectories.	
You have exceeded the maximum number of subdirectory levels allowed.	Specify a different destination because the directory level that you are trying to access cannot be specified.

Cause	Remedy
No response.	
The server was not running when you tried to send.	Make sure that the server is ON, and check the destination.
The network connection was lost when you tried to send. (Either you could not connect to the destination, or the connection was lost before the job could be completed.)	Check the status of the network.
You tried to send through NetWare, but the Tree name was not entered.	Enter the Tree name.
A TCP/IP error occurred when you tried to send an e-mail message or an I-fax.	Check that the network cables and connectors are properly connected.
Check the TCP/IP.	
Cause The machine's TCP/IP connection is not operating.	Check the IP Address Settings (IP Address, DHCP, RARP, BOOTP) in TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen).
Cannot find the selected server. Check the settings.	
The IP address that the machine should connect to cannot be determined.	1. Check the DNS Server Settings in TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen). 2. Check whether the DNS server's DNS settings are correct.
If Login Information in Register LDAP Server in System Settings (from the Additional Functions screen) is set to 'Use (security auth.)' for the LDAP server, the machine will not be able to determine the host name.	Check the DNS Server Settings in TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen).
Cannot connect to the selected server. Check the settings.	

Cause	Remedy
The machine cannot connect to the specified IP address/port.	1. Check the Gateway Address setting in IP Address Settings in TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen). 2. Check the Server Address and Port Number in Register LDAP Server in System Settings (from the Additional Functions screen). 3. Check whether the LDAP server is operating normally. 4. If Login Information in Register LDAP Server in System Settings (from the Additional Functions screen) is set to 'Use (security auth.)' for the LDAP server, check whether UDP (User Datagram Protocol) packages are blocked by the filter.
Check the user name and password or check settings.	
When setting Login Information for the LDAP server to 'Use' or 'Use (security auth.)', the user name or password is incorrect.	Check the User and Password settings when Login Information in Register LDAP Server in System Settings (from the Additional Functions screen) is set to 'Use' or 'Use (security auth.)'.
When setting Login Information for the LDAP server to 'Use (security auth.)', the domain name is incorrect.	Check the Domain Name setting when Login Information in Register LDAP Server in System Settings (from the Additional Functions screen) is set to 'Use (security auth.)'.
Cannot complete searching due to timeout. Check the settings.	
The search could not be completed within the time specified under <Search Timeout>.	Increase the time setting for Search Timeout in Register LDAP Server in System Settings (from the Additional Functions screen).
The number of search results has exceeded limits. Change search conditions and try again.	
The number of addresses that meet the search criteria exceeds the specified maximum number of addresses to search.	1. Narrow down the search criteria, and then search again. 2. Increase the maximum number of addresses to search.
Search condition includes characters that cannot be used with the selected server.	
"/" is used in the search criterion.	Remove "/" from the search criterion, and search again.

Cause	Remedy
The combination of characters used in the search criterion does not constitute an acceptable search criterion. There is an unequal number of "(" and ")". "*" is not placed within "( )".	Make sure that the characters for the search criterion are combined properly, and search again.
If <Server LDAP version and character code> is set to 'ver.2 (JIS)', characters other than ASCII Code (0x20-0x7E) are being used.	Omit characters that cannot be used, and search again.
Cannot start searching because the version setting for the server is incorrect. Check the settings.	
Although 'ver. 3' is set as the server LDAP version number in Register LDAP Server in System Settings (from the Additional Functions screen), the LDAP server is running on version 2.	Set Server LDAP version and character code in Register LDAP Server in System Settings (from the Additional Functions screen) to 'ver. 2'.

14.3.2 List of Error Codes without Messages

T-14-7

Cause	Remedy
# 001	
Paper or originals are jammed.	Place the document properly in the feeder or on the platen glass, and remove any jammed paper or originals.
# 003	
Communications that take longer than the preset time (64 minutes) caused the error.	1. Reduce the resolution, and try sending the document again. 2. When receiving a document, ask the remote party to either reduce the resolution at which the document is scanned, or divide the document into two or more parts before sending it.
# 005	

Cause	Remedy
The other party did not answer within 35 seconds.	Confirm that the remote machine is able to communicate, and try again.
The receiving machine is not a G3 fax.	Check the type of receiving machine with the receiving party.
# 009	
There is no paper.	Load paper.
The paper drawer is not correctly inserted into the machine.	Insert the paper drawer properly.
# 011	
The document that you are sending is not placed correctly.	Place the document properly in the feeder or on the platen glass, and repeat the whole procedure from the beginning.
# 012	
The document could not be sent because the receiving fax machine was out of paper.	Ask the receiving party to load paper into their fax machine.
# 018	
The receiving machine did not respond when your machine redialed.	Confirm that the receiving machine is able to communicate, and try again.
The documents could not be sent because the receiving machine was engaged.	Confirm that the receiving machine is able to communicate, and try again.
The settings on your machine do not match the settings on the receiving machine.	Confirm that the receiving machine is able to communicate, and try again.
# 022	
Forwarding could not be performed because all of the addresses stored under the specified Group destination have been deleted, or User Inboxes are specified as the Group destination.	Re-enter the forwarding address and try sending again.
Transmission could not be performed because the specified destination was deleted while the documents were waiting to be sent.	Re-enter the address in the address book and try sending again.
# 037	

Cause	Remedy
Documents could not be received because there was insufficient memory available.	Erase unwanted documents and documents with errors from memory to increase the amount of available memory.
# 080	
A subaddress is not set in the remote machine.	Check the subaddress of the remote machine, and try again.
# 081	
A password is not set in the remote machine.	Check the password of the remote machine, and try again.
# 099	
Sending was interrupted.	Try sending again.
# 102	
The subaddress and/or password do not match.	Check the subaddress and/or password of the remote machine, and try again.
# 107	
The document could not be sent because there was insufficient memory available.	1. Resend the document in a lower resolution. 2. Erase unwanted documents to make memory available. 3. If this problem occurs frequently, contact your local authorized Canon dealer.
# 701	
The specified Department ID does not exist, or the password has changed.	Enter the correct Department ID or password using 0-9 (numeric keys) on the control panel, and try sending again.
# 702	
The document could not be sent because the memory is full.	1. Wait a few moments, and try again after the other send jobs are complete. 2. Do not send the document to too many recipients at the same time. Send the document to a smaller number of recipients each time.
# 703	

Cause	Remedy
The memory for the image data is full.	1. Wait a few moments, and try again after the other send jobs are complete. 2. Erase documents stored in inboxes. If the machine still does not operate normally, turn the main power OFF, and then back ON again.
# 704	
An error occurred while reading address information from the Address Book.	Check the address settings. If the machine still does not operate normally, turn the main power OFF, and then back ON again.
# 705	
The send operation was interrupted because the size of the image data is larger than the Maximum Data Size for Sending set in E-mail/I-Fax Settings in Communications Settings in System Settings (from the Additional Functions screen).	Change the Maximum Data Size for Sending setting in E-mail/I-Fax Settings in Communications Settings in System Settings (from the Additional Functions screen). Select a lower resolution, or if you are using I-fax, decrease the number of pages containing images that you are sending each time, so that you do not exceed the Maximum Data Size for Sending limit.
# 706	
The Address Book is being imported or exported from the Remote UI, or it is being used by another sending component.	Wait until the Address Book import/export function from the Remote UI or the other sending component is complete, and try sending again.
# 711	
The inbox memory is full.	Erase the unnecessary documents stored in the inbox.
# 712	
The maximum number of documents is already stored in the inbox.	Erase the unnecessary documents stored in the inbox.
# 751	
The server is not functioning. The network is down (the server is unable to connect to the network or was disconnected).	Check the recipient's address. Check that the network is up.
# 752	

Cause	Remedy
The SMTP server name for e-mail or I-fax is not correct, or the server is not functioning. The domain name or e-mail address may not be set. The network is down.	Check the SMTP Server name and E-mail Address in E-mail/I-Fax in Network Settings in System Settings (from the Additional Functions screen). Check that the SMTP server is operating properly. Check the network status.
# 753	
A TCP/IP error occurred while sending an e-mail message. (Socket, Select error, etc.)	Check the network cables and connectors. If the machine still does not operate normally, turn the main power OFF, and then back ON again.
# 754	
The server is not functioning or the network is down. The destination setting is not correct.	Check the server and network. Check the destination's address settings.
# 755	
You cannot send jobs because TCP/IP is not functioning correctly.	Check TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen).
The IP address is not set.	Check TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen).
When the machine was turned ON, an IP address was not assigned to the machine by the DHCP, RARP, or BOOTP server.	Check TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen).
# 756	
NetWare in NetWare Settings in Network Settings in System Settings (from the Additional Functions screen) is set to 'Off'.	Turn NetWare to 'On'.
# 801	
A timeout error occurred while the machine was communicating with the SMTP server to send an e-mail message or send/receive an I-fax.	1. Check that the SMTP server is functioning normally. 2. Check the network status.
The SMTP server returned an error while trying to connect. The destination is not correct. An error occurred on the server side during transmission to a file server.	1. Check that the SMTP server is functioning normally. 2. Check the network status. 3. Check the destination setting. 4. Check the status and setting of the file server.
You are sending a file to a destination to which you have no write permission.	Check the destination setting.

Cause	Remedy
When the machine tried to send a file to the server, a file with the same name already exists on the FTP server and that file cannot be overwritten.	Change the setting on the file server to enable the file to be overwritten.
When the machine tried to send a file to the server, either the folder name is incorrectly specified or the password is incorrect.	Check the destination setting.
# 802	
The name of the SMTP Server in E-mail/I-Fax settings in Network Settings in System Settings (from the Additional Functions screen) is incorrect. The DNS server name in DNS Server Settings in TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen) is incorrect. Connection to the DNS server failed.	Check the name of the SMTP Server in E-mail/I-Fax and DNS Server Settings in TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen). Check that the DNS server is functioning normally.
# 803	
The connection was interrupted due to reasons on the recipient's side before all of the pages could be sent.	Try sending again.
# 804	
Unable to match the specified directory name when sending data to a file server.	Check the destination.
You have no permission to access the folder.	Change the setting on the server to enable access to the folder.
# 806	
An incorrect user name or password was specified for the sending of a file to a file server.	Change the user name or password.
An incorrect destination was specified for the sending of an e-mail message or I-fax.	Check the e-mail or I-fax address.
# 810	
A POP (Post Office Protocol) server connection error occurred while receiving an I-fax.	Check the POP Server name in E-mail/I-Fax in Network Settings in System Settings (from the Additional Functions screen). Confirm that the POP server is functioning normally. Check the network status.

Cause	Remedy
The POP server returned an error during the connection.	Check the POP Server name in E-mail/I-Fax in Network Settings in System Settings (from the Additional Functions screen). Confirm that the POP server is functioning normally. Check the network status.
A timeout error occurred on the server while connecting to the POP server.	Check the POP Server name in E-mail/I-Fax in Network Settings in System Settings (from the Additional Functions screen). Confirm that the POP server is functioning normally. Check the network status.
# 815	
You cannot log on to the file server because the machine is printing a document sent to that server. Simultaneous connections are not possible.	Wait for a few moments before trying to send the data again, or change the NetWare server to which you are sending your documents. Alternatively, stop the Pserver.
# 818	
The received data is not in a printable file format.	Ask the sender to change the file format and resend the data.
# 819	
You have received data that cannot be processed (MIME information is incorrect).	Check the settings, and ask the sender to resend the data.
# 820	
You have received data that cannot be processed (BASE 64 or uuencode is incorrect).	Check the settings, and ask the sender to resend the data.
# 821	
You have received data that cannot be processed (TIFF analysis error).	Check the settings, and ask the sender to resend the data.
# 822	
You have received data that cannot be processed (image data cannot be decoded).	Check the settings, and ask the sender to resend the data.
# 827	
You have received data that cannot be processed (contains MIME information that is not supported).	Check the settings, and ask the sender to resend the data.

Cause	Remedy
# 828	
You have received HTML data.	Ask the sender to use a file format other than HTML, and resend the data.
# 829	
Data that contains more than 1,000 pages is received.	This machine can print or store up to 999 pages of data in memory, but will delete any data that exceeds this limit. Ask the sender to resend the remaining pages.
# 830	
A DSN (Delivery Status Notification) error notification is received because of an incorrect I-fax address or destination setting, or the data size of the sent documents exceeds the mail server capacity.	1. Check the I-fax address or destination setting. 2. Set Maximum Data Size for Sending in E-mail/I-Fax Settings in Communication Settings in System Settings (from the Additional Functions screen) so that it is less than the mail server capability. 3. Check the status of the mail server, DNS server, and network.
# 831	
An I-fax document could not be received using SMTP because of the RX/Print Range setting in IP Address Settings in TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen).	Reset the RX/Print Range setting in IP Address Settings in TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen).
# 832	
DSN (Delivery Status Notification) mail was not sent because TCP/IP Settings or E-mail/I-Fax in Network Settings in System Settings (from the Additional Functions screen) have not been set, or trouble has occurred in the mail server.	1. Check the DNS Server Settings and IP Address Settings in TCP/IP Settings, and E-mail/I-Fax in Network Settings in System Settings (from the Additional Functions screen). 2. Check the status of the mail server and DNS server.
# 833	
MDN (Mail Delivery Notification) mail was not sent because TCP/IP Settings or E-mail/I-Fax in Network Settings in System Settings (from the Additional Functions screen) have not been set, or trouble has occurred in the mail server.	1. Check the DNS Server Settings and IP Address Settings in TCP/IP Settings, and E-mail/I-Fax in Network Settings in System Settings (from the Additional Functions screen). 2. Check the status of the mail server and DNS server.
# 834	

Cause	Remedy
An MDN error notification is received because of an incorrect I-fax address or destination setting, or trouble has occurred in the network or mail server. Alternatively, the memory of the receiving machine is full.	Check the I-fax address and destination settings.
# 835	
The maximum number of text lines for receiving an I-fax has been exceeded.	Ask the sender to reduce the amount of text data in the body of the document, and resend the data.
# 837	
A connection request was received from a host whose connection is restricted by IP Address Settings, which can be set in TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen).	Check the settings in IP Address Settings in TCP/IP Settings in Network Settings in System Settings (from the Additional Functions screen). Make sure that the connection request is made from an authorized host.
# 839	
The user name or password for the SMTP authentication (SMTP AUTH) in Authent./Encryption in E-mail/I-Fax in Network Settings in System Settings (from the Additional Functions screen) is incorrect.	Check the user name and password for SMTP Authentication (SMTP AUTH) in Authent./Encryption in E-mail/I-Fax in Network Settings in System Settings (from the Additional Functions screen).
# 841	
The encryption algorithm that matches the mail server does not exist for sending e-mail or I-fax.	1. Set Allow SSL in Network Settings in System Settings (from the Additional Functions screen) to 'Off'. 2. Add the same encryption algorithm as the mail server in the mail server settings.
# 842	
Authentication using the client certificate was requested by the mail server for sending e-mail or I-fax.	1. Set Allow SSL in Network Settings in System Settings (from the Additional Functions screen) to 'Off'. 2. Change the mail server settings so that the client certificate is not requested.
# 843	
There is large difference between the current time set in the KDC (Key Distribution Center) server and the one set in the machine.	1. Change the current date and time in Date & Time Settings in Timer Settings (from the Additional Functions screen). 2. Change the current time set in the KDC (Key Distribution Center) server.

Cause	Remedy
# 851	
There is insufficient memory remaining in the system.	Check the system's available memory, and delete unwanted documents in the inboxes.
The scanned document cannot be stored because there are more than 100 documents in the specified inbox.	Delete unnecessary documents from the specified inbox.
# 852	
An error occurred because the main power switch was turned OFF while a job was being processed.	Check to see if the main power switch is turned ON. Try processing the job again, if necessary.
# 899	
The e-mail message or I-fax has been successfully sent, but reception may be incomplete because the transmission was relayed via multiple servers.	1. Confirm whether reception was complete. 2. Check if you received an error notification.
# 995	
Reserved communication jobs were cleared.	Reserve the jobs again, if necessary.

14.4 Error Code Details

14.4.1 E code Overview

The machine is equipped with a function that checks its state; it runs a check at such times as programmed, and indicates a code on its control panel upon detection of a fault. The tables that follow show codes together with detail codes and the causes associated with the codes and timing of detection. They also offer how these errors may be reset.

14.4.2 E000

T-14-8

Code	Detail code	Nature	Description	Remedy	Remarks
E000	inadequate rise in temperature of the fixing unit at power-on				
	0001	delay error, temperature rise, at power-on	At power-on, the output of the non-contact thermistor does not reach 50 deg C.	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.	

14.4.3 E001

T-14-9

Code	Detail code	Nature	Description	Remedy	Remarks
E001	error in the fixing unit				
	0001	high reading, end thermistor; hardware	The reading of the end thermistor is abnormally high (230 deg C or more) for 400 msec continuously (hardware detection).	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.	
	0002	high reading, non-contact thermistor; software	The reading of the non-contact thermistor is abnormally high (250 deg C or more) for 500 msec continuously.	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.	
	0003	high reading, end thermistor; software	The reading of the end thermistor is abnormally high (220 deg C or more) for 500 msec continuously.	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.	
	0004	difference in reading between end and center large	The difference in readings of the non-contact thermistor and the end thermistor is 80 deg C or more for 500 msec continuously.	Check the thermistor, and then reset using the following service mode: COPIER>FUNCTION>CLEAR>ERR.	thermistor error
	0005	foreign matter, non-contact thermistor	The difference in readings of the non-contact thermistor and the end thermistor at the end of initial rotation is 20 deg C or more for 200 msec continuously.	Check the inside of the fixing assembly for residual paper, and check the thermistor; then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	residual paper indicated fixing assembly/ thermistor error

Code	Detail code	Nature	Description	Remedy	Remarks
	0006	open-circuit, non-contact thermistor film	The A/D value of the film side of the non-contact thermistor is FFh for 500 msec continuously.	Check the thermistor for an open-circuit, and check for a disconnected connector; then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	open-circuit in thermistor/ disconnected connector
	0007	short-circuit, non-contact thermistor film	The A/D value of the film side of the non-contact thermistor is 30h or less for 500 msec continuously.	Check the thermistor, then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	short-circuit in thermistor
	0008	open-circuit, no-contact thermistor case side	The A/D value on the case side of the non-contact thermistor is FFh for 500 msec continuously.	Check the thermistor for an open-circuit, and check for a disconnected connector; then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	open-circuit in thermistor/ disconnected connector
	0009	short-circuit, non-contact thermistor case	The A/D value on the case side and the A/D value of the film side of the non-contact thermistor is 0 deg C or more for 700 msec continuously.	Check the thermistor, and reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	short-circuit in thermistor

Code	Detail code	Nature	Description	Remedy	Remarks
	0010	open-circuit, end thermistor	The A/D value on the case side of the contact thermistor is FFh for 500 msec continuously.	Check the thermistor for an open-circuit, and reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	open-circuit in disconnected/ disconnected connector
	0011	short-circuit in end thermistor	The A/D value on the case is of the contact thermistor is 39h or less for 500 msec continuously.	Check the thermistor, and reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	short-circuit in thermistor

14.4.4 E002

T-14-10

Code	Detail code	Nature	Description	Remedy	Remarks
E002	inadequate rise in temperature of the fixing unit				
	0002		The reading of the non-contact thermistor reaches 50 deg C but does not reach 70 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0003		The reading of the non-contact thermistor reaches 70 deg C but does not reach 100 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0004		The reading of the non-contact thermistor reaches 100 dg C but does not reach 120 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0005		The reading of the non-contact thermistor reaches 120 C deg but does not reach 140 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0006		The reading of the non-contact thermistor reaches 140 deg C but does not reach 160 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0007		The reading of the non-contact thermistor reaches 160 deg C but does not reach 180 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0008		The reading of the non-contact thermistor reaches 180 deg C but does not reach the standby temperature (normally, 190 deg c) within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0101		The reading of the non-contact thermistor does not reach 120 deg C within 300 sec after power-on.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0102		The reading of the non-contact thermistor reaches 120 deg C but does not reach the standby temperature (normally 190 deg C) within 300 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	

14.4.5 E003

T-14-11

Code	Detail code	Nature	Description	Remedy	Remarks
E003	low temperature error of the fixing unit after standby				
	0001		The reading of the non-contact thermistor show a low temperature error (130 deg C or less) for 3.5 sec continuously after standby.	Reset using the following service mode item: COPIER>FUNCTION >CLEAR>ERR.	

14.4.6 E004

T-14-12

Code	Detail code	Nature	Description	Remedy	Remarks
E004	protection circuit error of the fixing unit				
	0001		A short-circuit is detected in the triac (for 1 sec or more continuously) while the heater remains off (hardware detection) for 40 msec continuously.	Turn off and then on the main power supply.	fixing assembly triac malfunction/ 13V power supply error

14.4.7 E006

T-14-13

Code	Detail code	Nature	Description	Remedy	Remarks
E006	fixing unit connection error				
	0000		The fixing unit is identified as not being connected for 400 msec continuously (hardware detection).	Turn off and then on the main power supply.	fixing unit present/ absent signal open-circuit/disconnected connector

14.4.8 E008

T-14-14

Code	Detail code	Nature	Description	Remedy	Remarks
E008	fixing roller life detection error				
	0001		The reading of the fixing roller life counter has reached its upper limit.	Turn off the main power, and replace the fixing roller or the fixing assembly; then, set '0' to the following in service mode: COPIER>COUNTER> MISC>FX-UP-RL.	

14.4.9 E010

T-14-15

Code	Detail code	Nature	Description	Remedy	Remarks
E010	main motor error				
	0001		After the motor start-up, a lock state is not detected within 2 sec or more.	Turn off and then on the main power.	excess load on feeding assembly
	0002		An off-lock state is detected for 500 msec or more after motor stabilization rotation.	Turn off and then on the main power.	excess load on feeding assembly

14.4.10 E012

T-14-16

Code	Detail code	Nature	Description	Remedy	Remarks
E012	drum motor error				
	0001		After the motor goes on, a lock state is not detected within 2 sec.	Turn off and then on the main power.	excess load on photosensitive drum
	0002		After motor stabilization rotation, a motor unlock state is detected for 500 msec or more.	Turn off and then on the main power.	excess load on photosensitive drum.

14.4.11 E013

T-14-17

Code	Detail code	Nature	Description	Remedy	Remarks
E013	ITB waste toner case full error				
	0000		After the ITB waste toner case full sensor goes on, a job is executed for an equivalent of 500 images (in terms of small size).	Replace the waste toner case.	

14.4.12 E014

T-14-18

Code	Detail code	Nature	Description	Remedy	Remarks
E014	fixing motor error				
	0001		After the motor goes on, a lock state is not detected for 2 sec or more.	Turn off and then on the main power supply.	excess load on fixing motor
	0002		After motor stabilization rotation, a motor unlock state is detected for 500 msec or more.	Turn off and then on the main power supply.	excess load on fixing motor

14.4.13 E020

T-14-19

Code	Detail code	Nature	Description	Remedy	Remarks
E020	drum/developer-related error				
			xx=01: Y xx=02: M xx=03: C xx=04: K xx=00: no color distinction		
	XX10		For INIT control at time of initial setting, the SGNL value is lower than 62.	Turn off and then on the main power.	damage on ATR sensor, soiling of ATR sensor window, poor developing assembly engagement, open-circuit in ATR sensor
	XX11		For INIT control at time of initial setting, the REF value is lower than 62.	Turn off and then on the main power.	damage on ATR sensor, open-circuit in ATR sensor
	XX12		For INIT control at time of initial setting, the SGNL value is 960 or higher.	Turn off and then on the main power.	damage to ATR sensor, malfunction of shutter, open-circuit in ATR sensor
	XX13		For INIT control at time of initial setting, the REF value is 960 or higher.	Turn off and then on the main power.	damage to ATR sensor, open-circuit in ATR sensor
	XX50		For ATR control, a fault in the backup data during computation of density data based on the SGNL value and the REF value caused the REF value to go '0'.	Turn off and then on the main power.	check on backup data

Code	Detail code	Nature	Description	Remedy	Remarks
	XX52		For ATR control, a fault in the backup data during computation of density data based on the SGNL value and the REF value caused the sensitivity coefficient to go '0'.	Turn off and then on the main power.	check on backup data
	XX81		When the background (drum surface) is read for patch detection, the value of P-SENS-P is lower than 255.	Turn off and then on the main power.	error in sensor read value caused by soiling of patch image read sensor with toner
	XX90		The result of computation based on patch readings in patch detection is lower than 16.	Turn off and then on the main power.	damage to patch image read sensor, poor rotation of developing sleeve, poor engagement of developing assembly, poor stirring of toner inside developing assembly, damage to toner stirring screw or feedscrew
	XX91		The result of computation based on patch readings in patch detection is 1008 or higher.	Turn off and then on the main power.	leakage from toner buffer inside developing assembly, damage to sensor

Code	Detail code	Nature	Description	Remedy	Remarks
	XX92		The result of computation based on 3 continuous patch readings in patch detection is lower than 42 for Y, M, and C and lower than 73 for Bk.	Turn off and then on the main power.	damage to patch image read sensor, poor rotation of developing sleeve, poor engagement of developing assembly, poor stirring of toner inside developing assembly (damage to toner stirring screw or feedscrew)
	XX93		The result of computation based on 3 continuous patch readings in patch detection is 52 or higher for Y, M, and C and 543 or higher for Bk.	Turn off and then on the main power.	leakage from toner buffer inside developing assembly, damage to sensor
	XXA0		For ATR control, the value of SGNL is lower than 62.	Turn off and then on the main power.	damage to ATR sensor, soiling of ATR sensor window, poor developing assembly engagement, open-circuit in ATR sensor
	XXA1		For ATR control, the value of REF is lower than 62.	Turn off and then on the main power.	damage to ATR sensor, open-circuit in ATR sensor
	XXA2		For ATR control, the value of SGNL is 960 or higher.	Turn off and then on the main power.	damage to ATR sensor, malfunction of shutter, open-circuit in ATR sensor

Code	Detail code	Nature	Description	Remedy	Remarks
	XXA3		For ATR control, the value of REF is 960 or higher.	Turn off and then on the main power.	damage to ATR sensor, open-circuit in ATR sensor
	XXA8		For ATR control, the detected T/D ratio exceeds the upper limit (13%) 3 times continuously.	Turn off and then on the main power.	leakage from toner buffer inside developing assembly
	XXA9		For ATR control, the detected T/D ratio exceeds the lower limit (3%) 3 times continuously.	Turn off and then on the main power.	

14.4.14 E021

T-14-20

Code	Detail code	Nature	Description	Remedy	Remarks
E021	developing assembly error				
	0001		The developing rotary home position cannot be detected.	Turn off and then on the main power.	error in HP sensor, fault in DC controller PCB, poor torque caused by excess load on developing assembly

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		The timing at which the flag goes on is too early with the developing rotary rotating, or is too late.	Turn off and then on the main power.	error in HP sensor, flat in DC control PCB wiring, poor torque caused by excess load on developing assembly
	0003		The sensor does not detect the flag when a stop is made at the position of developing rotary.	Turn off and then on the main power.	error in HP sensor, fault in DC controller PCB writing, poor torque caused by excess load on developing assembly.

14.4.15 E026

T-14-21

Code	Detail code	Nature	Description	Remedy	Remarks
E026	toner absent error				
			xx=01: Y xx=02: M xx=03: C xx=04: K		

Code	Detail code	Nature	Description	Remedy	Remarks
	xx01		The toner concentration does not return to a normal level after replacement of the toner bottle and 5 toner recovery sessions following the detention of the absence of toner.	Turn off and then on the main power, and fit a new toner bottle.	Some users tend to fit an empty toner bottle and cause the machine to execute a toner recovery session, causing the carrier to fly astray and damaging the ITB.

14.4.16 E032

T-14-22

Code	Detail code	Nature	Description	Remedy	Remarks
E032	NE controller counter failure				
	0001		A break is detected in the count pulse signal.	Turn off the main power, and check the cable for an open-circuit; then, turn the power back on.	

14.4.17 E045

T-14-23

Code	Detail code	Nature	Description	Remedy	Remarks
E045	transparency sensor error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		A sampling is taken in the absence of an obstacle during initial multiple rotation; the sampling data indicates a level lower than a specific level.	Turn off and then on the main power.	

14.4.18 E067

T-14-24

Code	Detail code	Nature	Description	Remedy	Remarks
E067	high-voltage-related error				
	0100		The current measured of the primary transfer ATVC is faulty 2 times in succession.	Turn off and then on the main power.	
	0110		The computed voltage of the primary transfer ATVC is faulty 2 times in succession.	Turn off and then on the main power.	

14.4.19 E070

T-14-25

Code	Detail code	Nature	Description	Remedy	Remarks
E070	ITB HP detection error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		The ITB home position is not detected within a specific period of time.	Turn off the main power, and check the ITB-HP sensor; then, turn the main power back on.	error in HP sensor, full displacement of belt, soiling of seal
	0002		The time that passes after detection of the ITB home position to the next detection of the home position is longer than a specific period of time.	Turn off the main power, and check the drive of the ITB; then, turn the main power back on.	slippage of belt against roller, causing delay in HP detection timing
	0003		The time that passes after detection of the ITB home position to the next detection of the home position is shorter than a specific period of time.	Turn off the main power, and check the surface of the ITB for scars; then, turn the main power back on.	rear in ITB, causing sensor to wrongly detect home position

14.4.20 E100

T-14-26

Code	Detail code	Nature	Description	Remedy	Remarks
E100	BD error				
	0001		After the polygon scanner goes on, a speed lock state does not occur for BD speed control within 5 sec.	Turn off the main power, and check the DC controller PCB wiring and the 24-V system fuses; then, turn the main power back on.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		While the polygon scanner is rotating at a constant speed, the speed clock for BD speed control goes off.	Turn off the main power, and check the DC control PCB wiring and the 24-V fuses; then, turn the main power back on.	
	0003		While the polygon scanner is rotating at a constant speed, the phase lock for BD phase control goes off.	Turn off the main power, and check the DC controller PCB wiring and the 24-V system fuses; then, turn the main power back on.	
	0004		After the polygon scanner goes on, the phase lock does not go on for BD phase control within 6 sec.	Turn off the main power, and check the DC controller PCB wiring and the 24-V system fuse; then, turn the main power back on.	

14.4.21 E110

T-14-27

Code	Detail code	Nature	Description	Remedy	Remarks
E110	laser scanner motor operation error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		After the polygon scanner goes on, the speed lock for FG speed control does not go on within 5 sec.	Turn off the main power, check the DC controller PCB wiring and the 24-V system fuses; then, turn the main power back on.	

14.4.22 E202

T-14-28

Code	Detail code	Nature	Description	Remedy	Remarks
E202	CIS unit HP detection error				
	0001		The HP sensor does not go on after the unit is moved in reverse for a specific length/period.	Disconnect and then connect the harness connectors; as necessary, replace the scanner HP sensor, scanner motor, and reader controller PCB.	
	0002		The HP sensor does not go off after the unit is moved forward for a specific length/period.	Disconnect and then connect the harness connector; as necessary, replace the scanner HP sensor, scanner motor, and reader controller PCB.	

14.4.23 E225

T-14-29

Code	Detail code	Nature	Description	Remedy	Remarks
E225	CIS light intensity error				
	0001		At time of power-on or at the start of a job, the machine cannot find out whether the lamp has gone on normally for shading correction.	Disconnect and connect the harness connectors; as necessary, replace the scanning lamp (xenon tube), CIS, inverter PCB, and reader controller PCB.	

14.4.24 E227

T-14-30

Code	Detail code	Nature	Description	Remedy	Remarks
E227	reader power supply error				
	0001		At time of power-on, the 24V port is off.	Disconnect and connect the power supply harness connector; as necessary, replace the power supply.	
	0002		At the start of a job, the 24V port is off.	Disconnect and then connect the power supply harness; as necessary, replace the power supply.	
	0003		At the end of a job, the 24V port is off.	Disconnect and then connect the power supply harness; as necessary, replace the power supply.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0004		When a load is driven, the 24V port is off.	Disconnect and connect the power supply harness; as necessary, replace the power supply.	

14.4.25 E240

T-14-31

Code	Detail code	Nature	Description	Remedy	Remarks
E240	communication error between main controller and DC controller				
	0000		An error occurred in the serial communication between the main controller and the DC controller.		
	0002		While printing is under way, no response arrives from the DC controller within a specific period of time.		

14.4.26 E243

T-14-32

Code	Detail code	Nature	Description	Remedy	Remarks
E243	control panel error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0000		An error occurred in the communication between the controller and the control panel.	Turn off the main power, and check the connectors between the main controller PCB and the control panel for connection; then, turn the main power back on.	

14.4.27 E248

T-14-33

Code	Detail code	Nature	Description	Remedy	Remarks
E248	backup memory error				
	0000		check error on backup SRAM board at time of start-up	Turn off the main power, and check the backup SRAM PCB for connection or replace the backup SRAM PCB; then, turn the main power back on.	
	0001		error on reader controller EEPROM at power-on	Replace the reader controller PCB.	
	0002		write error in reader controller EEPROM	Replace the reader controller PCB.	
	0003		reader error in reader controller EEPROM after check error wire operation	Replace the reader controller PCB.	

14.4.28 E315

T-14-34

Code	Detail code	Nature	Description	Remedy	Remarks
E315	image data error (fault in image conversion board, SDRAM, or HDD; or, poor connection)				
	0008	The ASIC on the main controller is faulty.	time-out error at time of encoding (no response within 30 sec)		
	000e	data damage/memory HDD error	software decoding error		
	0010	The ASIC on the main controller PCB is faulty.	time-out error at time of decoding		
	0025	The ASIC on the main controller PCB is faulty.	image data transfer error at time of rotation processing		
	0028	The ASIC on the main controller PCB is faulty.	time-out error at time of rotation processing		
	0034	The ASIC on the main controller PCB is faulty.	image data transfer error at time of magnification processing		
	0038	The ASIC on the main controller PCB is faulty.	time-out error rat time of magnification processing		

14.4.29 E351

T-14-35

Code	Detail code	Nature	Description	Remedy	Remarks
E351	Main controller PCB (sub) error				
	0000		communication error between Main controller PCB (sub) and main controller PCB (main) at start-up	Turn off the main power, and check the main controller PCB (main, sub); then, turn the main power back on.	

14.4.30 E400

T-14-36

Code	Detail code	Nature	Description	Remedy	Remarks
E400	feeder communication error				
	0001	data communication error	check sum error	Disconnect and then connect the connector; as necessary, replace the reader controller PCB and the DC controller of the ADF.	
	0002		reception status error	Disconnect and connect the connector; as necessary, replace the reader controller PCB and the DC controller PCB of the ADF.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0003		reception interrupt error	Disconnect and then connect the connector; as necessary, replace the reader controller PCB and the DC controller PCB of the ADF.	

14.4.31 E490

T-14-37

Code	Detail code	Nature	Description	Remedy	Remarks
E490	wrong model error				
	0001	model ID mismatch	A feeder for a different model is connected.	Use an ADF designed for the machine.	

14.4.32 E500

T-14-38

Code	Detail code	Nature	Description	Remedy	Remarks
E500	finisher communication error (common among finishers)				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001	data communication error	In the communication between the machine and the finisher, an error has been detected for a specific number of times and for a specific period of time.	Turn off the main power, and check the DC controller PCB, finisher PCB wiring, and 24V system fuses; then, turn the main power back on.	

14.4.33 E503

T-14-39

Code	Detail code	Nature	Description	Remedy	Remarks
E503	finisher internal communication error (Finisher-Q1/Q2)				
	0002	data communication error	error in communication between finisher and saddle unit		
	0003		error in communication between finisher and punch unit		

14.4.34 E505

T-14-40

Code	Detail code	Nature	Description	Remedy	Remarks
E505	backup memory error of finisher (Finisher-P1)				
	0001		an error has occurred in the data stored in the backup memory.	Turn off the main power, and check the DC controller PCB, finisher PCB wiring, and 24V system fuses; then, turn the main power back on.	

T-14-41

Code	Detail code	Nature	Description	Remedy	Remarks
E505	backup memory error of finisher (Finisher-Q1/Q2)				
	0001		An error has occurred in the data stored in the backup memory.	Turn off the main power, and check the DC controller PCB, finisher PCB wiring, and 24V system fuses; then, turn the main power back on.	
	0002		punch unit EEPROM data error		

14.4.35 E514

T-14-42

Code	Detail code	Nature	Description	Remedy	Remarks
E514	stack delivery error (Finisher-P1)				
	0001		when the return belt is moved to HP, the HP sensor does not go on within 1500 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.
	0002		When moving the return belt to the belt contact position, the HP sensor does not go off within 1500 msec after the start of the operation.	Turn off the main power, and check the finisher PCB and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-43

Code	Detail code	Nature	Description	Remedy	Remarks
E514	rear end assist motor error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the rear end assist motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on after the rear end assist motor has rotated for a specific period of time.		

14.4.36 E519

T-14-44

Code	Detail code	Nature	Description	Remedy	Remarks
E519	gear change motor error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the gear change motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on after the gear change motor has rotated for a specific period of time.		

14.4.37 E530

T-14-45

Code	Detail code	Nature	Description	Remedy	Remarks
E530	rear alignment error (Finisher-P1)				
	0001		When the rear aligning plate is being moved to home potion, the HP sensor does not go on within 2000 msec after the start of the operation.	Turn off and then on the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit on the function.
	0002		When the rear aligning plate is being moved to home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses: then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-46

Code	Detail code	Nature	Description	Remedy	Remarks
E530	front aligning plate error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the front alignment motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on when the front alignment motor has rotated for a specific period of time.		

14.4.38 E531

T-14-47

Code	Detail code	Nature	Description	Remedy	Remarks
E531	staple error (Finisher-P1)				
	0001		At time of staple jam recovery, the HP sensor does not go on within 500 msec after the start of the reversal rotation of the stapler motor.	Turn off the main motor, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		The HP sensor does not go off within 500 msec after the start of the stapler motor operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-48

Code	Detail code	Nature	Description	Remedy	Remarks
E531	stapler error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the stapler motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on after the stapler motor has rotated for a specific period of time.		

14.4.39 E532

T-14-49

Code	Detail code	Nature	Description	Remedy	Remarks
E532	stapler relocation error (Finisher-P1)				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		When the stapler unit is being moved to binding home position, the HP sensor does not go on within 1100 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.
	0002		While the stapler unit is being moved from home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-50

Code	Detail code	Nature	Description	Remedy	Remarks
E532	stapler relocation error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the stapler relocation motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on after the stapler relocation motor has rotated for a specific period of time.		

14.4.40 E535

T-14-51

Code	Detail code	Nature	Description	Remedy	Remarks
E535	swing error (Finisher-P1)				
	0001		When the swing arm is moved to home position, the HP sensor does not go on within 2000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB and the 24V system fuses; then, turn on the main power back on.	
	0002		When the swing arm is moved from the home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	

T-14-52

Code	Detail code	Nature	Description	Remedy	Remarks
E535	swing error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the swing motor has rotated for a specific period of time.		
	0002		The HP sensor does not go off after the swing motor has rotated for a specific period of time.		
	0003		hazardous area		

14.4.41 E537

T-14-53

Code	Detail code	Nature	Description	Remedy	Remarks
E537	front alignment error (Finisher-P1)				
	0001		When the front aligning plate is moved to home position, the HP sensor does not go on within 2000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.
	0002		When the front aligning plate is moved from home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-54

Code	Detail code	Nature	Description	Remedy	Remarks
E537	rear alignment error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the swing motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on after the swing motor has rotated for a specific period of time.		

14.4.42 E540

T-14-55

Code	Detail code	Nature	Description	Remedy	Remarks
E540	stack tray ascent/descent error (Finisher-P1)				
	0002		A paper surface search does not end within 1000 msec.	Turn of the main power, and check the finisher PCB wiring and the 24V system wiring; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.
	0003		In the course of a paper surface search, the encoder lock signal within 200 msec does not reach 10 pulses.	Turn off the main power, and check the finisher PCB wiring an the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.
	0004		In the course of a paper surface search, an error is found in the input of the paper upper surface, paper power surface, tray upper limit, or tray lower limit sensor.	Turn off the main power, and correct the stack tray position; then, check the finisher PCB wiring and the 24V system fuses, and turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-56

Code	Detail code	Nature	Description	Remedy	Remarks
E540	upper tray ascent/descent error (Finisher-Q1/Q2)				
	0001		upper tray ascent/descent motor clock error		
	0002		area error		
	0003		safety switch activation		

14.4.43 E542

T-14-57

Code	Detail code	Nature	Description	Remedy	Remarks
E542	lower tray ascent/descent error (Finisher-Q1/Q2)				
	0001		lower try ascent/descent motor clock error		
	0002		area error		
	0003		safety switch activation		

14.4.44 E577

T-14-58

Code	Detail code	Nature	Description	Remedy	Remarks
E577	paddle error (Finisher-P1)				
	0001		When the paper retaining paddle is moved to home position, the HP sensor does not go on within 1500 msec after the start of the operation.	Turn off the main power, and check the finisher PCB and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit on the function.

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		When the paper retaining paddle is moved from home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn the main power off, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit on the function.

14.4.45 E580

T-14-59

Code	Detail code	Nature	Description	Remedy	Remarks
E580	stack tray ascent/descent error				
		faulty stack tray ascent motor (M5), stack tray power height sensor (S10), stack tray ascent/ descent motor clock sensor (S9); disconnected connector; error load on stack tray ascent/ descent motor	While the stack tray decent/ decent motor is in operation, the stack tray upper limit sensor goes on; or, within 0.8 sec, the clock signal of the stack tray direction motor clock sensor is not detected 15 times or more. After the stack tray ascent/ descent motor has started ascent operation, the tray does not reach the stack tray height sensor within 4 sec; or, the tray does not leave the height sensor.		

14.4.46 E584

T-14-60

Code	Detail code	Nature	Description	Remedy	Remarks
E584	shutter unit error (Finisher-Q1/Q2)				
	0001		The shutter open sensor does not go off (i.e., the shutter does not close).		
	0002		The shutter open sensor does not go on (i.e., the shutter does not open).		
	0003		hazardous area		

14.4.47 E590

T-14-61

Code	Detail code	Nature	Description	Remedy	Remarks
E590	punch motor error (punch unit)				
	0001		The puncher does not detect the punch home position sensor when the punch motor has been driven 200 msec.		

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		After the motor is stopped during initalization of the punch motor, the puncher does not detect the punch home position sensor.		

14.4.48 E591

T-14-62

Code	Detail code	Nature	Description	Remedy	Remarks
E591	punch dust sensor error (punch unit)				
	0001		error light reception voltage when the light emitter is on		
	0002		error light reception voltage when the light emitter is off		

14.4.49 E592

T-14-63

Code	Detail code	Nature	Description	Remedy	Remarks
E592	punch horizontal registration sensor error (punch unit)				
	0001		error light reception voltage when the light emitter is on (rear end sensor)		

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		error light reception voltage when the light emitter is off (rear end sensor)		
	0003		error light reception voltage when the light emitter is on (horizontal registration sensor 1)		
	0004		error light reception voltage when the light emitter is off (horizontal registration sensor 1)		
	0005		error light reception voltage when the light emitter is on (horizontal registration sensor 2)		
	0006		error light reception voltage when the light emitter is off (horizontal registration sensor 2)		
	0007		error light reception voltage when the light emitter is on (horizontal registration sensor 3)		
	0008		error light reception voltage when the light emitter is off (horizontal registration sensor 3)		
	0009		error light reception voltage when the light emitter is on (horizontal registration sensor 4)		
	000A		error light reception voltage when the light emitter is off (horizontal registration sensor 4)		

14.4.50 E593

T-14-64

Code	Detail code	Nature	Description	Remedy	Remarks
E593	punch relocation motor error (punch unit)				
	0001		When the light emitter is on, the light reception voltage HP sensor does not go off.		
	0002		When the light emitter is off, the light reception voltage HP sensor does not go on.		

14.4.51 E5F0

T-14-65

Code	Detail code	Nature	Description	Remedy	Remarks
E5F0	saddle paper positioning error				
	0001		The paper positioning plate HP sensor does not go on within 1.33 sec after the paper positioning plate motor is driven.		paper positioning plate motor (M4S), paper positioning plate HP sensor (PI7S)
	0002		The paper position plate HP sensor does not go off within 1 sec after the paper positioning plate motor is driven for 1 sec.		paper positioning plate motor (M4S), paper positioning plate HP sensor (PI7S)

14.4.52 E5F1

T-14-66

Code	Detail code	Nature	Description	Remedy	Remarks
E5F1	saddle paper folding error				
	0001		The number of detection pulses of the paper fold motor clock sensor drops below a specific value.		paper fold motor (M2S), paper fold motor clock sensor (PI4S)
	0002		The start of the paper fold HP sensor does not change within 3 sec after the paper fold motor is driven.		paper fold motor (M2S), paper fold motor clock sensor (PI4S)

14.4.53 E5F2

T-14-67

Code	Detail code	Nature	Description	Remedy	Remarks
E5F2	saddle guide error				
	0001		The guide HP sensor does not go on within 0.455 sec after the guide motor is driven.		guide motor (M3S), guide HP sensor (PI3S)
	0002		The guide HP sensor dose not go off within 1 sec after the guide motor is driven.		guide motor (M3S), guide HP sensor (PI3S)

14.4.54 E5F3

T-14-68

Code	Detail code	Nature	Description	Remedy	Remarks
E5F3	saddle alignment error				
	0001		The aligning plate HP sensor does not go on within 0.5 sec after the alignment motor is driven. (at time of initialization, 1.67 sec)		alignment motor (M5S), aligning plate HP sensor (PI5S)
	0002		The aligning plate HP sensor does not go off within 1 sec after the alignment motor is driven.		alignment motor (M5S), aligning plate HP sensor (PI5S)

14.4.55 E5F4

T-14-69

Code	Detail code	Nature	Description	Remedy	Remarks
E5F4	saddle rear stapler error				
	0001		The stitching operation HP sensor does not go on when the switch motor (rear) is driven in reverse for 0.5 sec or more.		stitch motor (rear; M6S), switching HP sensor (rear, MS5S)

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		The stitching HP sensor does not go off when the switch motor (rear) is driven in normal direction for 0.5 sec or more.		switch motor (rear, M6S), stitching HP sensor (rear, MS5S)

14.4.56 E5F5

T-14-70

Code	Detail code	Nature	Description	Remedy	Remarks
E5F5	saddle front stapler error				
	0001		The stitching HP sensor does not go on when the switch motor (front) is driven in reverse for 0.5 sec or more.		switch motor (front, M7S), stitching HP sensor (front, MS7S)
	0002		The stitching HP sensor does not go off when the stitch motor (front) is driven in normal direction for 0.5 sec or more.		switch motor (front, M7S), stitching HP sensor (front, MS7S)

14.4.57 E5F6

T-14-71

Code	Detail code	Nature	Description	Remedy	Remarks
E5F6	saddle butting error				
	0001		The paper pushing plate HP sensor does not go on when the paper pushing motor is driven for 0.3 sec or more.		paper pushing plate motor (M8S), paper pushing plate HP sensor (PI14S)
	0002		The paper pushing plate HP sensor does not go off when the paper pushing plate motor is driven for 80 msec or more.		paper pushing plate motor (M8S), paper pushing plate HP sensor (PI14S)
	0003		The number of detection pulses of the paper pushing plate motor clock sensor drops below a specific value.		paper pushing plate motor (M8S), paper pushing plate motor clock sensor (PI1S)
	0004		The paper pushing plate leading edge sensor does not go off when the paper pushing plate motor is driven for 80 msec or more.		paper pushing plate motor (M8S), paper pushing plate leading edge sensor (PI15S)
	0005		The paper pushing plate leading edge sensor does not go on when the paper pushing motor is driven for 0.3 sec or more.		paper pushing plate motor (M8S), paper pushing plate leading edge sensor (PI15S)

14.4.58 E5F8

T-14-72

Code	Detail code	Nature	Description	Remedy	Remarks
E5F8	saddle connector error				
	0001		The connector of the guide HP sensor is identified as being disconnected.		connector of guide HP sensor (PI13S)
	0002		The connector of the paper pushing plate HP sensor is identified as being disconnected.		connector of paper pushing plate HP sensor (PI4S)
	0003		The connector of the paper pushing plate leading edge sensor is identified as being disconnected.		connector of paper pushing plate leading edge sensor (PI5S)

14.4.59 E5F9

T-14-73

Code	Detail code	Nature	Description	Remedy	Remarks
E5F9	saddle switch error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		The inlet cover switch is identified as being open for 1 sec or more after the start of printing or after the start of initial rotation of the host machine with the cover identified by the following sensor as being closed: - inlet cover sensor (PI9S) - front cover open/closed sensor (PI2S) - delivery cover sensor (PI3S) or, the front cover switch (MS2S) or the delivery cover switch (MS3S) is open.		inlet cover switch (MSIS), front cover switch (MS2S), delivery cover switch (MS3S)
	0002		The front cover switch is identified as being open for 1 sec or more after the start of printing or after the start of initial rotation of the host machine with the cover identified by the following sensor as being closed: - inlet cover sensor (PI9S) - front cover open/closed sensor (PI2S) - delivery cover sensor (PI3S)		front cover switch (MS2S), delivery cover switch (MS3S)

Code	Detail code	Nature	Description	Remedy	Remarks
	0003		The delivery cover switch is identified as being open for 1 sec or more after the start of printing or after the start of initial rotation of the host machine with the cover identified by the following sensor as being closed: - inlet cover sensor (PI9S) - front cover open/closed sensor (PI2S) - delivery cover sensor (PI3S)		delivery cover switch (MS3S)

14.4.60 E601

T-14-74

Code	Detail code	Nature	Description	Remedy	Remarks
E601	communication error in image memory (SDRAM)				
	0000				

14.4.61 E602

T-14-75

Code	Nature
E602	hard disk error

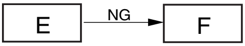
14.4.62 E602 in detail

If the machine indicates E602-xxyy, it requires different approaches as indicated by its suffix (detail code).

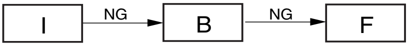
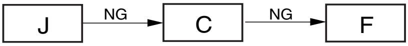
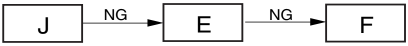
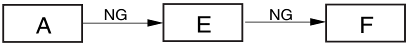
If the machine indicates E602-xxyy, be sure to turn off and then on the main power once (so that the machine will execute automatic recovery sequence).

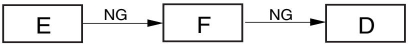
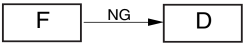
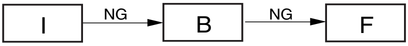
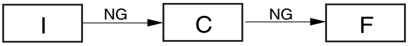
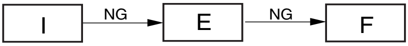
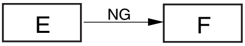
T-14-76

xx	Partition	yy	Description
00	entire HDD	01	The machine cannot recognize the HDD. The machine cannot find BOOTDEV at start-up. Remedy: Turn off the main power, and check the 2 types of cables (power, IDE) that come from the HDD for connection; then, turn the main power back on. $\boxed{F} \xrightarrow{NG} \boxed{D}$
		02	The machine cannot find the system software for the main controller (main) CPU in BOOTDEV. Remedy: $\boxed{E} \xrightarrow{NG} \boxed{F}$
		03	The machine detects a faulty read sector while it reads data from BOOTDEV. Remedy: $\boxed{H} \xrightarrow{NG} \boxed{E} \xrightarrow{NG} \boxed{F}$
		06	The machine cannot find system software for the main controller (sub) CPU in BOOTDEV. Remedy: $\boxed{E} \xrightarrow{NG} \boxed{F}$

xx	Partition	yy	Description
		07	The machine cannot find appropriate ICCProfile in BOOTDEV/ PDLDEV. Remedy: 

T-14-77

xx	Partition	yy	Description
01	DOSDEV	01, 02	The machine has detected a read error or a file system error at start-up. Remedy:  - in the case of xxyy = 0701, 0702 Remedy: Ask the user to collect address book data, transfer settings, and user mode data using the remote UI.  - in the case of xxyy = 0801, 0802 Remedy:  - in the case of xxyy = FF01, FF02 Remedy: 
02	FSTDEV		
03	DOSDEV2		
04	FSTPDEV		
05	DOSDEV3		
06	PDLDEV		
07	DOSDEV4		
08	BOOTDEV		
09	DOSDEV5		
FF	not specified		
		03	The system has detected an HDD contact fault or an operation system error.

xx	Partition	yy	Description
			Remedy: Turn off the main power, and check the 2 types of cables (power supply, IDE) that come from the HDD for connection; then, turn the main power back on. At that time, check to see if the HDD is rotating and that power is being supplied. 
		11, 21	The machine detected an HDD contact fault. Remedy: Turn off the main power, and check the 2 types of cables (power supply, IDE) for connection; then, turn the power back on. At that time, check to see that the HDD is rotating and power is being supplied. 
		13, 25	The machine has detected a read error. Remedy:  - in the case of xxyy = 0713, 0725 Remedy:  - in the case of xxy = 0813, 0825 Remedy: 
		10, 12, 14, 22, 23, 24	The machine has detected a system error or a packet data error. Remedy: 

A:

1) Make the following selections, and enter '0': COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK*.
3) When done, turn off and then on the main power.

B:

1) By referring to [HDD format], make the following selections, and enter the appropriate value: COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key: COPIER>FUNCTION>SYSTEM>HD-CLEAR.
3) When done, turn off and then on the main power.

C:

1)** Start up the machine in normal mode (i.e., turn on the main power while holding down the 1 and 7 keys); then, make the following selections, and press the OK key: COPIER>FUNCTION>SYSTEM>DOWNLOAD.
2) Execute DOSDEV4 using the SST (formatting).
3) When done, turn on and then off the main power.

D:

1) Replace the main controller (main) board.
2) Remove the image memory (SDRAM) and the boot ROM from the older board, and mount them to the new board.

E:

1)** Start up the machine in safe mode (i.e., turn on the main power while holding down the 2 and 8 keys).
2) Format the HDD (ALL) and download the system software (SYSTEM, LANG, RUI) using the SST.
3) When done, turn off and then on the main power.

F:

1)** Replace the HDD, and start up the machine in safe mode (i.e., turn on the main power while holding down the 2 and 8 keys).
2) Format the HDD (ALL) and download the system software (SYSTEM, LANG, RUI) using the SST.
3) When done, turn off and then on the main power.

G:

1) Make the following selections, and enter '1': COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CLEAR.
3) When done, turn off and then on the main power.

H:

1) Turn off the main power, and press the 1 and 9 keys to turn it back on (so that the machine will automatically start its recovery program*, turning the control panel to go fully black).
2) When done (i.e., when the screen has turned fully white), turn off and then on the main power.

⚠If the machine does not start its recovery program in response to the foregoing operation, go to E.

I:

1) By referring to [HDD format], make the following selections, and enter an appropriate value: COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK*.
3) When done, turn off and then on the main power.

J:

1) Make the following selections, and enter '4': COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK (1 to 5 min).
3) When done, turn off and then on the main power.

* Takes about 30 to 50 min.

** As necessary, ask the user to collect address book data, transfer settings, and user mode data in advance using the remote UI.

T-14-78

- HDD Format

Partition	CHK-TYPE	Data deleted
DOSDEV	1	all image-related data (reservations, Box, fax), mode memory, routine task button
FSTDEV	1	
DOSDEV2	1	
FSTPDEV	1	
DOSDEV3	2	PDL spool
PDLDEV	3	PDL-related file (font, registration from, ICCProfile, etc.)
DOSDEV4	4	user data (address book, transfer settings), system software
BOOTDEV	4	
DOSDEV5	5	-
not specified	0	-

14.4.63 E604

T-14-79

Code	Detail code	Nature	Description	Remedy	Remarks
E604	image memory (SDRAM) shortage				
	0000		The machine does not recognize an amount of memory needed for the model in question.		For information on models and memory amounts, see the table prepared for it.

14.4.64 E605

T-14-80

Code	Detail code	Nature	Description	Remedy	Remarks
E605	image memory battery fault				
	0000		The machine has detected a drop in the voltage (below a specific level).		

14.4.65 E606

T-14-81

Code	Detail code	Nature	Description	Remedy	Remarks
E606	hard disk error				
	0001		The machine has detected a mount error on the HD at time of a boot from the boot ROM.		
	0002		The machine has detected a read error when booting the HD from the boot ROM.		

14.4.66 E674

T-14-82

Code	Detail code	Nature	Description	Remedy	Remarks
E674	fax board error				
	0001		The machine has recognized the fax board, but it cannot communicate with it.	Turn off the main power, and check the connection between the fax board and the main controller PCB; then, turn the main power back on.	If the fault is not corrected, replace the fax board or the main controller PCB.

14.4.67 E677

T-14-83

Code	Detail code	Nature	Description	Remedy	Remarks
E677	external controller fault				
	0003	fault in EFI controller	The machine has detected a fault during a configuration check when starting up an EFI controller.	Turn off the main power, and check the connection cable; then, turn the main power back on.	If the fault is not corrected, reinstall the system software of the EFI controller.

Code	Detail code	Nature	Description	Remedy	Remarks
	0010		A controller designed for a different model is connected.	Turn off the main power, and check to see if the controller is one designed for the model and check the connector cable; then, turn the main power back on.	If the fault is not corrected, reinstall the system software of the EFI controller.
	0080		The external controller has started up normally, but the machine has detected an error in the communication with the printer unit.	Turn off the main power, and check the cable; then, turn the main power back on.	If the fault is not corrected, reinstall the system software of the EFI controller.

14.4.68 E710

T-14-84

Code	Detail code	Nature	Description	Remedy	Remarks
E710	IPC initialization error				
	0001		The machine does not become ready 3 sec after starting up the IPC chip.	Turn off the main power, and check the cable; then, turn the main power back on.	

14.4.69 E711

T-14-85

Code	Detail code	Nature	Description	Remedy	Remarks
E711	IPC communication error				
	0001	data communication error	An error is recorded in the IPC chip error register 4 times or more within 1.5 sec.	Turn off the power, and check the cable; then, turn the power back on.	fault in ADF controller/reader controller PCB; poor connection of connector between reader and DADF
	0002	IPC communication error	An error is detected but cannot be corrected within 1.5 sec after the communication between the finisher and the printer is suspended.	Turn off the main power, and check the cable; then, turn the power back on.	error in data communication; fault in finisher controller PCB, DC controller PCB; poor connection of connector

14.4.70 E712

T-14-86

Code	Detail code	Nature	Description	Remedy	Remarks
E712	error in communication between ADF and reader unit				
			The communication between the reader unit and the ADF has stopped, and 5 sec or more has passed without recovery.		

14.4.71 E713

T-14-87

Code	Detail code	Nature	Description	Remedy	Remarks
E713	error in communication between finisher and printer				
		error in data communication; fault in fisher controller PCB, DC controller PCB	The communication between the machine and the finisher is disrupted.	Turn off the power, and check the cable; then, turn the power back on.	Turn off the main power, and check the cable; then, turn the main power back on.

14.4.72 E716

T-14-88

Code	Detail code	Nature	Description	Remedy	Remarks
E716	error in communication between cassette pedestal and printer unit				
	0000	error in data communication; fault in deck controller or cassette pedestal controller PCB	The communication between the cassette pedestal and the machine stopped, and 2 sec or more has passed without recovery.		

14.4.73 E717

T-14-89

Code	Detail code	Nature	Description	Remedy	Remarks
E717	error in communication with NE controller				
	0000		The communication stopped with the NE controller, and is not resumed within 3 sec.		
	0001		The machine does not recognize the NE controller that was connected before its power was turned off.	Reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	
	0002		The IPC has an open-circuit, and the machine cannot correct the error in the IPC.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	

14.4.74 E719

T-14-90

Code	Detail code	Nature	Description	Remedy	Remarks
E719	error in communication with coin vendor/card reader				
	0000		The machine does not recognize the presence of a coin vendor at time of start-up.		
	0001		When the power is turned on, the machine does not recognize the presence of the coin vendor that was connected before the power was turned off.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		- The IPC cable connected to the coin vendor has an open-circuit. The machine cannot recover IPC communication. - The machine has detected an open-circuit in the pickup/delivery signal. - The machine has detected an illegal connection (short-circuit in Tx and Rx of IPC).	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	
	0011		When the power is turned on, the machine does not recognize the card reader that was connected before the power was turned off.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	
	0012		The machine has detected an open-circuit in the IPC cable connected to the card reader, and the machine cannot recover the communication.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	

14.4.75 E730

T-14-91

Code	Detail code	Nature	Description	Remedy	Remarks
E730	PDL error				
	1001	PDL software error	The machine has detected an initialization error at the start of a job.	Execute a PDL reset, or turn off and then on the main power.	
	100A	PDL software error	While processing a job, the machine failed to release the semaphore; the machine has detected a system error (e.g., initialization error).	Execute a PDL reset, or turn off and then on the main power.	
	100B	PDL master font error	At time of start-up, the machine detected a mismatch between the version number indicated in the master font control file and the bootable version. The machine does not detect the presence of master font control file in / BOOTEV.	Execute a PDL reset, or turn off and then on the main power.	If the fault is not corrected, reinstall the appropriate font file, or format and reinstall all system software.
	9004	open I/F communica-tion error	The machine has detected a PAI error in the communication with the EFI controller.	Turn off the main power, and check the open I/F board and the cable for connection; then, turn the main power back on.	If the fault is not corrected, replace the EFI controller, open I/F PCB, or main controller PCB.

Code	Detail code	Nature	Description	Remedy	Remarks
	9005	The machine has detected a fault in the video cable connected to the EFI controller.	Turn off the main power, and check the open I/F board and the cable for connection; then, turn the main power back on.	Turn off the main power, and check the open I/F board and the cable for connection; then, turn the main power back on.	If the fault is not corrected, replace the EFI controller, open I/F PCB, or main controller PCB.
	A006	PDL communication error	PDL does not respond. PDL does not respond because of a fault in the sub bootbable program, the absence of a sub bootable program, or fault in RIPA.	Execute a PDL reset; or, turn off the main power, check the SURF2 board for connection, and turn the main power back on.	If the fault is not corrected, reinstall the firmware, or replace the main controller PCB.
	A007	PDL version mismatch	At time of start-up, the machine detected a mismatch in the versions between the machine's control software and the PDL control software.	Execute a PDL reset, or turn off and then on the main power.	If the fault is not corrected, format and reinstall all system software.
	B013	PDL built-in font error	At time of start-up, the machine detected damage in the font data.	Turn off and then on the main power.	If the fault is not corrected, format and reinstall all system software.

14.4.76 E731

T-14-92

Code	Detail code	Nature	Description	Remedy	Remarks
E731	UFR board error				

Code	Detail code	Nature	Description	Remedy	Remarks
	3000	UFR board error	At time of start-up, the machine does not recognize the presence of a UFR1 board.	Turn off the main power, and check the connection of the UFR2 board; then, turn the main power back on.	If the fault is not corrected, replace the UFR2 board or the main controller PCB.
	3001	The machine cannot initialize the UFR board.	At time of startup, the machine failed to initialize UFR1.	Turn off the main power, and check the UFR2 board; then, turn the main power back on.	If the fault is not corrected, replace the UFR2 board or the main controller PCB.
	3002	The machine cannot initialize the RAM bus.	TBD		
	3015	No image data arrives at the main controller PCB.	The machine's software is free of a fault when processing a job; however, video data fails to arrive at CL1-G.	Turn off and then on the main power.	If the fault cannot be corrected, replace the UFR2 board or the main controller PCB.

14.4.77 E732

T-14-93

Code	Detail code	Nature	Description	Remedy	Remarks
E732	reader communication error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001	DDI-S communication error		Turn off the main power, and check the connectors used to connect to the reader unit; then, check the reader power supply, and turn the main power back on.	
	9999		On a printer model, a reader unit has been detected at time of start-up. (A copier model starts up once as a printer model at time of RAM initialization.)	Turn off and then on the main power.	The indication on the machine is limited to "Turn On the Power."

14.4.78 E733

T-14-94

Code	Detail code	Nature	Description	Remedy	Remarks
E733	printer communication error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0000	printer communica-tion error	At time of start-up, the machine cannot detect the presence of a printer unit.	Turn off the main power, and check the connectors used to connect the DC controller PCB and the main controller PCB; then, check the power supply of the printer unit, and turn the main power back on.	
	0001	DDI-P communica-tion error		Turn off the main power, and check the connectors used to connect the DC controller PCB and the main controller PCB; then, check the power supply of the printer unit, and turn the main power back on.	

14.4.79 E740

T-14-95

Code	Detail code	Nature	Description	Remedy	Remarks
E740	Ethernet board error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		At time of start-up, the MAC address proves to be illegal.	Turn off the main power, and replace the NIC; then, turn the main power back on.	The machine has detected a non-Canon MAC address.

14.4.80 E743

T-14-96

Code	Detail code	Nature	Description	Remedy	Remarks
E743	DDI communication error				
			The reader controller PCB has detected an error in communication between the main controller PCB an the reader controller PCB.	Disconnect and then connect the DDI-S cable connector; replace the reader controller PCB or the main controller PCB.	

14.4.81 E744

T-14-97

Code	Detail code	Nature	Description	Remedy	Remarks
E744	language file/boot ROM error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		The language version stored on the HDD and the bootable ROM version are different from each other.	Download a language file with the correct version using the service support tool.	
	0002		The size of the language file on the HDD is too large.	Download a language file with the correct version using the service support tool.	
	0003		The machine cannot find a language file specified by config.txt stored on the HDD.	Download a language file with the correct version using the service support tool.	
			The machine cannot switch over to a language file stored on the HDD.	Download a language file with the correct version using the service support tool.	
	0004		The machine cannot switch power to a language file stored on the HDD.		
	0005		The boot ROM mounted in the machine is one designed for a different model.		
	1000	boot ROM project error	The boot ROM connected to the machine is one designed for a different model.	Turn off the main power, and replace the boot ROM with an appropriate one; then, turn the main power back on.	

Code	Detail code	Nature	Description	Remedy	Remarks
	3000	illegal boot ROM module version	At time of start-up, the boot ROM is identified as not being able to operate normally.	Upgrade the boot ROM, or replace it.	

14.4.82 E745

T-14-98

Code	Detail code	Nature	Description	Remedy	Remarks
E745	TokenRing board error				
	0001		When initializing the TokeRing driver, the machine failed to initialize the PCI.	Turn off the main power, and check the connector of the TokenRing board; then, replace the TokenRing, and turn the main power back on.	
	0002	faulty MAC address	When initializing the TokenRing driver, the machine found that the MAC address was faulty.	Turn off the main power, and replace the TokenRing board; then, turn the main power back on.	
	0003	The machine cannot obtain board information.	When initializing the TokeRing driver, the machine suffered an error in obtaining/setting up the board information.	Turn off the main power, and replace the TokenRing board; then, turn the main power back on.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0004	connector error	When starting up the TokeRing driver, the machine suffered a connection error.	Turn off the main power, and check the cable connection and the power supply of the MAU; then, turn the main power back on.	

14.4.83 E746

T-14-99

Code	Detail code	Nature	Description	Remedy	Remarks
E746	wrong accessories board				
	0003		At time of start-up, the machine detected a UFR board designed for a different model.	Replace the UFR board with an appropriate one.	The machine checks the engine ID to see if it is a correct one.
	0004		At time of start-up, the machine detects a scanner board designed for a different model.	Replace the scanner board with an appropriate one.	The machine checks the engine ID to see if it is a correct one.

14.4.84 E747

T-14-100

Code	Detail code	Nature	Description	Remedy	Remarks
E747	error in image processing ASIC or memory control/communication control ASIC				
	---		The machine has detected an error (e.g., image data transfer error) in IC1015 (image processing ASIC) or IC1012 (memory control/communication ASIC; CPU) of the main controller PCB.	Turn off the main power, and check the main controller PCB; then, turn the main power back on.	

14.4.85 E803

T-14-101

Code	Detail code	Nature	Description	Remedy	Remarks
E803	door closed error				
	0001		The machine detected a remote (+24V) OFF state immediately after the door is closed.	Turn off the main power, and check the DC controller PCB and the presence/ absence of a fault in the interlock; then, turn the main power back on.	fault in interlock; short-circuit in 24V system; other fault in power supply; open-circuit around power supply; blown fuse

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		The machine detects a remote (+13V) OFF state immediately after the door is closed.	Turn off the main power, and check the DC controller PCB wiring and the presence/absence of a fault in the interlock; then, turn the main power back on.	fault in interlock; open-circuit in 13V system; other fault in power supply; open-circuit around power supply

14.4.86 E804

T-14-102

Code	Detail code	Nature	Description	Remedy	Remarks
E804	controller fan error				
	0004		The machine has detected that the controller fan remained at rest for 16 sec continuously.	Turn off the main power, and check the power to the fan or replace the fan; then, turn the main power back on.	

14.4.87 E805

T-14-103

Code	Detail code	Nature	Description	Remedy	Remarks
E805	fan error				
	0001		With the exhaust fan (front) in operation, the machine does not detect a lock state for 5 sec continuously.	Turn off the main power, and check the DC controller PCB; then, turn the main power back on.	disconnected fan connector; absence of lock signal because of fault in fan
	0002		With the exhaust fan (rear) in operation, the machine does not detect a lock state for 5 sec continuously.	Turn off the main power, and check the DC controller PCB wiring; then, turn the main power back on.	disconnected fan connector; absence of lock signal because of fault in fan
	0003		With the ITB fan in operation, the machine does not detect a lock state for 5 sec continuously.	Turn off the main power, and check the DC controller PCB; then, turn the power back on.	disconnected fan connector; absence of lock signal because of fault in fan
	0004		With the fan and the toner fan in operation, the machine does not detect a lock state for 5 sec continuously.	Turn off the main power, and check the DC controller PCB wiring; then, turn the main power back on.	disconnected fan connector; absence of signal because of fault in fan

Chapter 15

Service Mode

Contents

15.1 Outline..15-1
  15.1.1 Construction of Service Mode 15-1
  15.1.2 Starting Service Mode and Making Selections 15-3
  15.1.3 Ending Service Mode...15-4
  15.1.4 Back-Up 15-4
  15.1.5 Initial Screen 15-6
  15.1.6 2nd/3rd Item Screen 15-7
  15.1.7 4th Item Screen 15-8
15.2 DISPLAY（Status Display Mode）...15-10
  15.2.1 COPIER..15-10
    15.2.1.1 VERSION 15-10
      15.2.1.1.1 Overview 15-10
      15.2.1.1.2 <DC-CON> 15-10
      15.2.1.1.3 <R-CON> 15-10
      15.2.1.1.4 <PANEL> 15-10
      15.2.1.1.5 <ECO> 15-10
      15.2.1.1.6 <FEEDER> 15-10
      15.2.1.1.7 <SORTER> 15-11
      15.2.1.1.8 <FAX> 15-11
      15.2.1.1.9 <NIB> 15-11
      15.2.1.1.10 <PS/PCL> 15-11
      15.2.1.1.11 <LIPS> 15-11
      15.2.1.1.12 <SDL-STCH> 15-11
      15.2.1.1.13 <OP-CON> 15-11
      15.2.1.1.14 <MN-CON> 15-11
      15.2.1.1.15 <BOOT-ROM> 15-11
      15.2.1.1.16 <DIAG-DVC>..15-11
      15.2.1.1.17 <RUI> 15-12
      15.2.1.1.18 <PUNCH>..15-12
      15.2.1.1.19 <LANG-EN>..15-12
      15.2.1.1.20 <LANG-FR> 15-12
      15.2.1.1.21 <LANG-DE>..15-12

15.2.1.1.22 <LANG-IT> 15-12
15.2.1.1.23 <LANG-JP> 15-12
15.2.1.1.24 <GDI-UFR> 15-12
15.2.1.2 ACC-STS 15-12
15.2.1.2.1 Overview 15-12
15.2.1.2.2 <FEEDER> 15-13
15.2.1.2.3 <SORTER> 15-13
15.2.1.2.4 <DECK> 15-13
15.2.1.2.5 <CARD> 15-13
15.2.1.2.6 <DATA-CON> 15-13
15.2.1.2.7 <RAM> 15-13
15.2.1.2.8 <COINROBO> 15-14
15.2.1.2.9 <NIB> 15-14
15.2.1.2.10 <NETWARE> 15-14
15.2.1.2.11 <SEND> 15-14
15.2.1.3 ANALOG 15-14
15.2.1.3.1 Overview 15-14
15.2.1.3.2 <TEMP> 15-14
15.2.1.3.3 <HUM> 15-15
15.2.1.3.4 <ABS-HUM> 15-15
15.2.1.3.5 <FIX-UC> 15-15
15.2.1.3.6 <FIX-UE> 15-15
15.2.1.4 JAM 15-15
15.2.1.4.1 Overview 15-15
15.2.1.4.2 <No.> 15-17
15.2.1.4.3 <DATE> 15-17
15.2.1.4.4 <TIME1> 15-17
15.2.1.4.5 <TIME2> 15-17
15.2.1.4.6 <L> 15-17
15.2.1.4.7 <CODE> 15-18
15.2.1.4.8 <P> 15-18
15.2.1.4.9 <CNTR> 15-19
15.2.1.4.10 <SIZE> 15-19
15.2.1.4.11 Jam Code (jam type) 15-19
15.2.1.4.12 Jam Code (printer unit) 15-20
15.2.1.4.13 Jam Code (finisher-related) 15-21

15.2.1.4.14 Jam Code (ADF-related) 15-22
15.2.1.5 ERR 15-24
15.2.1.5.1 Overview 15-24
15.2.1.5.2 <No.> 15-24
15.2.1.5.3 <DATE> 15-24
15.2.1.5.4 <TIME1> 15-24
15.2.1.5.5 <DATE2> 15-24
15.2.1.5.6 <CODE> 15-25
15.2.1.5.7 <DTL> 15-25
15.2.1.5.8 <L> 15-26
15.2.1.5.9 <P> 15-26
15.2.1.6 DENS 15-26
15.2.1.6.1 Overview 15-26
15.2.1.6.2 <DENS-Y> 15-27
15.2.1.6.3 <DENS-M> 15-27
15.2.1.6.4 <DENS-C> 15-28
15.2.1.6.5 <DENS-K> 15-28
15.2.1.6.6 <REF-Y/M/C> 15-28
15.2.1.6.7 <SGNL-Y/M/C> 15-29
15.2.1.6.8 <P-SENS-P> 15-29
15.2.1.7 MISC 15-29
15.2.1.7.1 Overview 15-29
15.2.1.7.2 <DRM-LIFE> 15-30
15.2.1.8 ALARM-1 15-30
15.2.1.8.1 Overview 15-30
15.2.1.8.2 <IMG-DT-Y> 15-30
15.2.1.8.3 <IMG-DT-M> 15-30
15.2.1.8.4 <IMG-DT-C> 15-30
15.2.1.8.5 <IMG-DT-K> 15-30
15.2.1.9 ALARM-2 15-31
15.2.1.9.1 Overview 15-31
15.2.1.10 ENVRNT 15-33
15.2.1.10.1 Overview 15-33
15.2.2 FEEDER 15-34
15.2.2.1 Overview 15-34
15.2.2.2 <FEEDSIZE> 15-34

15.2.2.3 <TRY-WIDE> 15-35
15.2.3 DISPLAY(Status Display Mode)Level2 15-35
15.2.3.1 COPIER 15-35
15.2.3.1.1 VERSION 15-35
15.2.3.1.2 CST-STS 15-36
15.2.3.1.3 HV-STS 15-37
15.2.3.1.4 CCD 15-37
15.2.3.1.5 DPOT 15-38
15.2.3.1.6 DENS 15-39
15.3 I/O （I/O Display Mode） 15-40
15.3.1 Overview 15-40
15.3.2 <DC-CON> 15-41
15.3.3 <R-CON> 15-45
15.3.4 <FEEDER> 15-47
15.3.5 <SORTER> 15-48
15.3.6 <MN-CON> 15-56
15.4 ADJUST （Adjustment Mode） 15-59
15.4.1 COPIER 15-59
15.4.1.1 ADJ-XY 15-59
15.4.1.1.1 Overview 15-59
15.4.1.1.2 <ADJ-X> 15-59
15.4.1.1.3 <ADJ-Y> 15-60
15.4.1.1.4 <ADJ-S> 15-62
15.4.1.1.5 <ADJ-Y-DF> 15-62
15.4.1.1.6 <STRD-POS> 15-63
15.4.1.2 CCD 15-63
15.4.1.2.1 Overview 15-63
15.4.1.2.2 <W-PLT-X/Y/Z> 15-63
15.4.1.2.3 <CCDU-RG> 15-64
15.4.1.2.4 <MTF-MG> 15-65
15.4.1.2.5 <MTF-SG> 15-65
15.4.1.2.6 <BOOK-RG> 15-66
15.4.1.2.7 <DF-RG> 15-66
15.4.1.2.8 <50-RG> 15-67
15.4.1.2.9 <50-GB> 15-67
15.4.1.2.10 <100-RG> 15-67

15.4.1.2.11 <100-GB> 15-68
15.4.1.2.12 <50DF-RG> 15-68
15.4.1.2.13 <50DF-GB> 15-68
15.4.1.2.14 <100DF-RG> 15-68
15.4.1.2.15 <100DF-GB> 15-68
15.4.1.2.16 <DFTAR-R> 15-68
15.4.1.2.17 <DFTAR-G> 15-69
15.4.1.2.18 <DFTAR-B> 15-69
15.4.1.2.19 <DFTAR2-R> 15-69
15.4.1.2.20 <DFTAR2-G> 15-70
15.4.1.2.21 <DFTAR2-B> 15-70
15.4.1.3 LASER 15-70
15.4.1.3.1 Overview 15-70
15.4.1.3.2 <PVE-OFST> 15-71
15.4.1.3.3 <LA-DELAY> 15-71
15.4.1.4 IMG-REG 15-72
15.4.1.4.1 Overview 15-72
15.4.1.4.2 <REG-V-Y> 15-73
15.4.1.4.3 <REG-V-K> 15-73
15.4.1.4.4 <REG2-V-Y> 15-74
15.4.1.4.5 <REG2-V-K> 15-74
15.4.1.4.6 <REG-V-M> 15-75
15.4.1.4.7 <REG2-V-M> 15-75
15.4.1.5 DENS 15-76
15.4.1.5.1 Overview 15-76
15.4.1.5.2 <SGNL-Y> 15-76
15.4.1.5.3 <SGNL-M> 15-76
15.4.1.5.4 <SGNL-C> 15-77
15.4.1.5.5 <SGNL-D> 15-77
15.4.1.5.6 <REF-Y> 15-77
15.4.1.5.7 <REF-M> 15-78
15.4.1.5.8 <REF-C> 15-78
15.4.1.5.9 <REF-D> 15-78
15.4.1.6 BLANK 15-78
15.4.1.6.1 Overview 15-78
15.4.1.6.2 <BLANK-T> 15-79

15.4.1.6.3 <BLANK-L> 15-79
15.4.1.6.4 <BLANK-R> 15-80
15.4.1.6.5 <BLANK-B> 15-80
15.4.1.7 PASCAL 15-81
15.4.1.7.1 Overview 15-81
15.4.1.7.2 <OFST-P-Y> 15-81
15.4.1.7.3 <OFST-P-M> 15-81
15.4.1.7.4 <OFST-P-C> 15-82
15.4.1.7.5 <OFST-P-K> 15-82
15.4.1.8 COLOR 15-82
15.4.1.8.1 Overview 15-82
15.4.1.8.2 <ADJ-Y> 15-83
15.4.1.8.3 <ADJ-M> 15-83
15.4.1.8.4 <ADJ-C> 15-83
15.4.1.8.5 <ADJ-K> 15-84
15.4.1.8.6 <OFST-Y> 15-84
15.4.1.8.7 <OFST-M> 15-84
15.4.1.8.8 <OFST-C> 15-85
15.4.1.8.9 <OFST-K> 15-86
15.4.1.9 HV-PRI 15-86
15.4.1.9.1 Overview 15-86
15.4.1.9.2 <OFST1-AC> 15-86
15.4.1.9.3 <PRI-GAIN> 15-87
15.4.1.9.4 <PRI-OFST> 15-88
15.4.1.9.5 <DR-I-INT> 15-88
15.4.1.10 HV-TR 15-89
15.4.1.10.1 Overview 15-89
15.4.1.10.2 <2TR-GAIN> 15-89
15.4.1.10.3 <2TR-OFST> 15-90
15.4.1.10.4 <1TR-GAIN> 15-90
15.4.1.10.5 <1TR-OFST> 15-91
15.4.1.11 FEED-ADJ 15-91
15.4.1.11.1 Overview 15-91
15.4.1.11.2 <REGIST> 15-92
15.4.1.11.3 <ADJ-C1> 15-92
15.4.1.11.4 <ADJ-C2> 15-93

15.4.1.11.5 <ADJ-C3> 15-93
15.4.1.11.6 <ADJ-C4> 15-94
15.4.1.11.7 <ADJ-MF> 15-94
15.4.1.11.8 <ADJ-DK> 15-95
15.4.1.11.9 <RG-REFE> 15-95
15.4.1.11.10 <ADJ-C1RE> 15-96
15.4.1.11.11 <ADJ-C2RE> 15-97
15.4.1.11.12 <ADJ-C3RE> 15-97
15.4.1.11.13 <ADJ-C4RE> 15-98
15.4.1.11.14 <ADJ-DKRE> 15-98
15.4.1.11.15 <ADJ-MFRE> 15-99
15.4.1.11.16 <RG-HF-SP> 15-99
15.4.1.12 CST-ADJ 15-100
15.4.1.12.1 Overview 15-100
15.4.1.12.2 <MF-A4R> 15-100
15.4.1.12.3 <MF-A6R> 15-101
15.4.1.12.4 <MF-A4> 15-101
15.4.1.13 MISC 15-102
15.4.1.13.1 Overview 15-102
15.4.1.13.2 <SEG-ADJ> 15-102
15.4.1.13.3 <K-ADJ> 15-102
15.4.1.13.4 <ACS-ADJ> 15-103
15.4.2 FEEDER 15-103
15.4.2.1 Overview 15-103
15.4.2.2 <DOCST> 15-104
15.4.2.3 <LA-SPEED> 15-104
15.4.3 SORTER 15-104
15.4.3.1 Overview 15-104
15.4.3.2 <PNCH-HLE> 15-105
15.4.4 ADJUST （Adjustment Mode） Level2 15-105
15.4.4.1 COPIER 15-105
15.4.4.1.1 LASER 15-105
15.4.4.1.2 DENS 15-105
15.4.4.1.3 V-CONT 15-106
15.4.4.1.4 COLOR 15-110
15.4.4.1.5 HV-TR 15-112

15.4.4.1.6 FEED-ADJ 15-117
15.4.4.1.7 MISC 15-118
15.5 FUNCTION （Operation/Inspection Mode） 15-121
15.5.1 COPIER 15-121
15.5.1.1 INSTALL 15-121
15.5.1.1.1 Overview 15-121
15.5.1.1.2 <STIR-Y> 15-121
15.5.1.1.3 <STIR-M> 15-121
15.5.1.1.4 <STIR-C> 15-122
15.5.1.1.5 <STIR-K> 15-122
15.5.1.1.6 <STIR-4> 15-122
15.5.1.1.7 <INIT-Y> 15-123
15.5.1.1.8 <INIT-M> 15-123
15.5.1.1.9 <INIT-C> 15-123
15.5.1.1.10 <INIT-3> 15-124
15.5.1.1.11 <SPLY-H-Y> 15-124
15.5.1.1.12 <SPLY-H-M> 15-124
15.5.1.1.13 <SPLY-H-C> 15-125
15.5.1.1.14 <SPLY-H-K> 15-125
15.5.1.1.15 <SPLY-H-4> 15-125
15.5.1.1.16 <STRD-POS> 15-126
15.5.1.1.17 <CARD> 15-126
15.5.1.1.18 <KEY> 15-127
15.5.1.2 CCD 15-127
15.5.1.2.1 Overview 15-127
15.5.1.2.2 <DF-WLVL1/2> 15-127
15.5.1.3 CST 15-128
15.5.1.3.1 Overview 15-128
15.5.1.3.2 <MF-A4R, MF-A6R, MF-A4> 15-129
15.5.1.4 CLEANING 15-129
15.5.1.4.1 Overview 15-129
15.5.1.4.2 <TBLT-CLN> 15-130
15.5.1.4.3 <FDRL-CLN> 15-130
15.5.1.4.4 <RVRL-CLN> 15-130
15.5.1.4.5 <DEVL-CLN> 15-131
15.5.1.4.6 <TB-INSD> 15-131

15.5.1.5 FIXING 15-132
  15.5.1.5.1 Overview 15-132
  15.5.1.5.2 <NIP-CHK> 15-132
15.5.1.6 PANEL 15-134
  15.5.1.6.1 Overview 15-134
  15.5.1.6.2 <LCD-CHK> 15-135
  15.5.1.6.3 <LED-CHK> 15-135
  15.5.1.6.4 <LED-OFF> 15-135
  15.5.1.6.5 <KEY-CHK> 15-136
  15.5.1.6.6 <TOUCHCHK> 15-137
15.5.1.7 PART-CHK 15-137
  15.5.1.7.1 Overview 15-137
  15.5.1.7.2 <CL> 15-137
  15.5.1.7.3 <CL-ON> 15-138
  15.5.1.7.4 <FAN> 15-139
  15.5.1.7.5 <FAN-ON> 15-139
  15.5.1.7.6 <MTR> 15-140
  15.5.1.7.7 <MTR-ON> 15-141
  15.5.1.7.8 <SL> 15-141
  15.5.1.7.9 <SL-ON> 15-142
15.5.1.8 CLEAR 15-143
  15.5.1.8.1 Overview 15-143
  15.5.1.8.2 <ERR> 15-143
  15.5.1.8.3 <DC-CON> 15-143
  15.5.1.8.4 <R-CON> 15-144
  15.5.1.8.5 <JAM-HIST> 15-144
  15.5.1.8.6 <ERR-HIST> 15-145
  15.5.1.8.7 <PWD-CLR> 15-145
  15.5.1.8.8 <ADRS-BK> 15-145
  15.5.1.8.9 <CNT-MCON> 15-146
  15.5.1.8.10 <CNT-DCON> 15-146
  15.5.1.8.11 <OPTION> 15-147
  15.5.1.8.12 <MMI> 15-147
  15.5.1.8.13 <MN-CON> 15-148
  15.5.1.8.14 <CARD> 15-148
  15.5.1.8.15 <DRM-LIFE> 15-149

15.5.1.9 MISC-R 15-149
  15.5.1.9.1 Overview 15-149
  15.5.1.9.2 <SCANLAMP> 15-150
15.5.1.10 MISC-P 15-150
  15.5.1.10.1 Overview 15-150
  15.5.1.10.2 <P-PRINT> 15-150
  15.5.1.10.3 <USER-PRT> 15-151
  15.5.1.10.4 <LBL-PRNT> 15-151
  15.5.1.10.5 <DEV-DR-Y> 15-151
  15.5.1.10.6 <DEV-DR-M> 15-152
  15.5.1.10.7 <DEV-DR-C> 15-153
  15.5.1.10.8 <DEV-DR-K> 15-153
  15.5.1.10.9 <ITB-CLSW> 15-154
  15.5.1.10.10 <DRM-CHK> 15-154
  15.5.1.10.11 <1ATVC-EX> 15-155
  15.5.1.10.12 <ENV-PRT> 15-155
15.5.1.11 SYSTEM 15-156
  15.5.1.11.1 Overview 15-156
  15.5.1.11.2 <DOWNLOAD> 15-156
  15.5.1.11.3 <CHK-TYPE> 15-157
  15.5.1.11.4 <HD-CHECK> 15-157
  15.5.1.11.5 <HD-CLEAR> 15-158
15.5.2 FEEDER 15-158
  15.5.2.1 Overview 15-158
  15.5.2.2 <MTR-CHK> 15-159
  15.5.2.3 <TRY-A4> 15-159
  15.5.2.4 <TRY-A5R> 15-159
  15.5.2.5 <TRY-LTR> 15-159
  15.5.2.6 <TRY-LTRR> 15-159
  15.5.2.7 <FEED-CHK> 15-159
  15.5.2.8 <SL-CHK> 15-160
  15.5.2.9 <SL-ON> 15-160
  15.5.2.10 <MTR-ON> 15-160
  15.5.2.11 <ROLL-CLN> 15-161
  15.5.2.12 <FEED-ON> 15-161
15.5.3 FUNCTION （operation/inspection mode） :Level 2 15-161

15.5.3.1 COPIER 15-161
15.5.3.1.1 CCD 15-161
15.5.3.1.2 LASER 15-163
15.5.3.1.3 CLEAR 15-163
15.5.3.1.4 MISC-P 15-163
15.6 OPTION （Machine Settings Mode） 15-164
15.6.1 COPIER 15-164
15.6.1.1 BODY 15-164
15.6.1.1.1 Overview 15-164
15.6.1.1.2 <MODEL-SZ> 15-164
15.6.1.1.3 <PASCAL> 15-165
15.6.1.1.4 <CONFIG> 15-165
15.6.1.1.5 <TEMP-TBL> 15-166
15.6.1.1.6 <W/SCNR> 15-166
15.6.1.1.7 <RUI-DSP> 15-167
15.6.1.1.8 <NW-SPEED> 15-167
15.6.1.1.9 <DEVL-PTH> 15-167
15.6.1.1.10 <DFDST-L1> 15-168
15.6.1.1.11 <DFDST-L2> 15-168
15.6.1.1.12 <DST-POS> 15-168
15.6.1.1.13 <CCD-LUT> 15-169
15.6.1.1.14 <2T-RL-TM> 15-170
15.6.1.1.15 <ENVP-INT> 15-170
15.6.1.1.16 <FX-SPD2> 15-171
15.6.1.1.17 <LPW-TIME> 15-171
15.6.1.2 USER 15-171
15.6.1.2.1 Overview 15-171
15.6.1.2.2 <COPY-LIM> 15-172
15.6.1.2.3 <SLEEP> 15-172
15.6.1.2.4 <COUNTER 1> 15-172
15.6.1.2.5 <COUNTER 2> 15-172
15.6.1.2.6 <COUNTER 3> 15-173
15.6.1.2.7 <COUNTER 4> 15-173
15.6.1.2.8 <COUNTER 5> 15-173
15.6.1.2.9 <COUNTER 6> 15-174
15.6.1.2.10 Software Counter Specifications 15-175

15.6.1.2.11 <CONTROL> 15-189
15.6.1.2.12 <B4-L-CNT> 15-189
15.6.1.2.13 <COPY-JOB> 15-189
15.6.1.2.14 <IDPRN-SW> 15-190
15.6.1.2.15 <CPRT-DSP> 15-190
15.6.1.2.16 <CNT-SW> 15-190
15.6.1.2.17 <REMPNL> 15-191
15.6.1.2.18 <BCNT-AST> 15-191
15.6.1.2.19 <DFLT-CPY> 15-191
15.6.1.2.20 <DFLT-BOX> 15-192
15.6.1.2.21 <DOC-REM> 15-192
15.6.1.3 CST 15-192
15.6.1.3.1 Overview 15-192
15.6.1.3.2 <ENV1/ENV2> 15-193
15.6.1.4 ACC 15-193
15.6.1.4.1 Overview 15-193
15.6.1.4.2 <COIN> 15-193
15.6.1.4.3 <DK-P> 15-194
15.6.1.4.4 <CARD-SW> 15-194
15.6.1.4.5 <OUT-TRAY> 15-194
15.6.1.5 INT-FACE 15-194
15.6.1.5.1 Overview 15-194
15.6.1.5.2 <IMG-CONT> 15-194
15.6.1.6 COMBO 15-196
15.6.1.6.1 Overview 15-196
15.6.1.6.2 <PPR/COL/MOD-SLCT> 15-197
15.6.1.6.3 <2TR-SW1/SW2/SW3/SW4/SW5> 15-198
15.6.2 SORTER 15-198
15.6.2.1 Overview 15-198
15.6.2.2 <BLNK-SW> 15-199
15.6.2.3 <MD-SPRTN> 15-199
15.6.3 BOARD 15-200
15.6.3.1 Overview 15-200
15.6.3.2 <SURF-OFF> 15-200
15.6.4 OPTION （mechanical specifications setting mode） :Level 2 . 15-201
15.6.4.1 COPIER 15-201

15.6.4.1.1 BODY 15-201
15.6.4.1.2 USER.. 15-224
15.6.4.1.3 CST 15-229
15.6.4.1.4 ACC.. 15-230
15.6.4.1.5 INT-FACE.. 15-232
15.6.4.2 BOARD.. 15-233
15.6.4.2.1 <MENU-1 to 4> 15-233
15.7 TEST （Test Print Mode） 15-234
15.7.1 COPIER.. 15-234
15.7.1.1 PG.. 15-234
15.7.1.1.1 Overview 15-234
15.7.1.1.2 <TYPE> 15-234
15.7.1.1.3 <TXPH> 15-235
15.7.1.1.4 <THRU> 15-236
15.7.1.1.5 <DENS-Y,DENS-M,DENS-C,DENS-K> 15-236
15.7.1.1.6 <COLOR-Y,COLOR-M,COLOR-C,COLOR-K>........ 15-236
15.7.1.1.7 <F/M-SW> 15-237
15.7.1.1.8 <PG-PICK>.. 15-237
15.7.1.1.9 <2-SIDE> 15-237
15.7.1.1.10 <PG-QTY>.. 15-238
15.7.1.2 NETWORK.. 15-238
15.7.1.2.1 <Outline> 15-238
15.7.1.2.2 <PING>.. 15-238
15.8 COUNTER （Counter Mode） 15-241
15.8.1 COPIER.. 15-241
15.8.1.1 TOTAL.. 15-241
15.8.1.1.1 <Overview>.. 15-241
15.8.1.1.2 <SERVICE1>.. 15-241
15.8.1.1.3 <SERVICE2>.. 15-241
15.8.1.1.4 <COPY>.. 15-242
15.8.1.1.5 <PDL-PRT> 15-242
15.8.1.1.6 <FAX-PRT>.. 15-242
15.8.1.1.7 <RMT-PRT> 15-242
15.8.1.1.8 <BOX-PRT> 15-243
15.8.1.1.9 <RPT-PRT> 15-243
15.8.1.1.10 <2-SIDE> 15-243

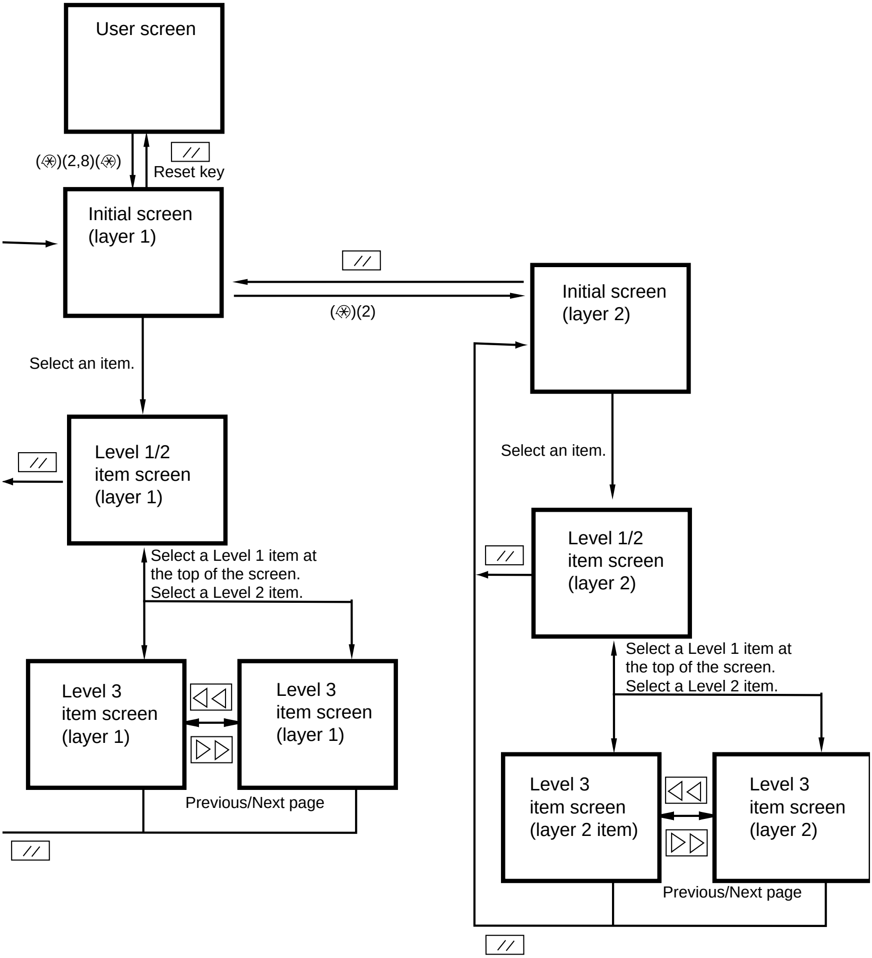
15.8.1.1.11 <SCAN> 15-243
15.8.1.2 PICK-UP 15-244
15.8.1.2.1 <Outline> 15-244
15.8.1.2.2 <C1> 15-244
15.8.1.2.3 <C2> 15-244
15.8.1.2.4 <C3> 15-245
15.8.1.2.5 <C4> 15-245
15.8.1.2.6 <MF> 15-245
15.8.1.2.7 <DK> 15-245
15.8.1.2.8 <2-SIDE> 15-245
15.8.1.3 FEEDER 15-246
15.8.1.3.1 <Overview> 15-246
15.8.1.3.2 <FEED> 15-246
15.8.1.4 JAM 15-246
15.8.1.4.1 <Overview> 15-246
15.8.1.4.2 <TOTAL> 15-246
15.8.1.4.3 <FEEDER> 15-246
15.8.1.4.4 <SORTER> 15-246
15.8.1.4.5 <2-SIDE> 15-247
15.8.1.4.6 <MF> 15-247
15.8.1.4.7 <C1> 15-247
15.8.1.4.8 <C2> 15-247
15.8.1.4.9 <C3> 15-247
15.8.1.4.10 <C4> 15-247
15.8.1.4.11 <DK> 15-247
15.8.1.5 MISC 15-247
15.8.1.5.1 <Overview> 15-247
15.8.1.5.2 <FX-UP-RL> 15-248
15.8.1.5.3 <DV-UNT-K> 15-249
15.8.1.5.4 <DRM-CNTR> 15-249
15.8.1.6 DRBL-1 15-250
15.8.1.6.1 <Overview> 15-250
15.8.1.6.2 <LSR-DRV> 15-250
15.8.1.6.3 <LSR-MTR> 15-250
15.8.1.6.4 <T-CLN-BD> 15-250
15.8.1.6.5 <TR-BLT> 15-250

15.8.1.6.6 <TR-ROLL> 15-250
15.8.1.6.7 <2TR-ROLL> 15-251
15.8.1.6.8 <2TR-CL>..15-251
15.8.1.6.9 <ITB-CL> 15-251
15.8.1.6.10 <EL-NDL>...15-251
15.8.1.6.11 <DV-UNT-C>..15-251
15.8.1.6.12 <DV-UNT-Y>..15-251
15.8.1.6.13 <DV-UNT-M> 15-251
15.8.1.6.14 <C1-PU-RL>...15-252
15.8.1.6.15 <C2-PU-RL>...15-252
15.8.1.6.16 <M-PU-RL>...15-252
15.8.1.6.17 <FX-LW-RL> 15-252
15.8.1.6.18 <FX-UNIT> 15-252
15.8.1.6.19 <FX-UP-FR>...15-252
15.8.1.7 DRBL-2...15-253
15.8.1.7.1 <Overview>...15-253
15.8.1.7.2 <DF-PU-RL> 15-253
15.8.1.7.3 <DF-SP-PD>..15-253
15.8.1.7.4 <DF-FD-RL> 15-253
15.8.1.7.5 <LNT-TAPE> 15-253
15.8.1.7.6 <PD-PU-RL> 15-253
15.8.1.7.7 <C3-PU-RL>..15-254
15.8.1.7.8 <C4-PU-RL>..15-254
15.8.1.7.9 <SORT> 15-254
15.8.1.7.10 <FIN-STPR>..15-254
15.8.1.7.11 <SADDLE>..15-254
15.8.1.7.12 <SDL-STPL> 15-254
15.8.1.7.13 <PUNCH>...15-254
15.8.1.7.14 <PNCH-HRS>..15-254
15.8.1.7.15 <FN-BFFRL>...15-255
15.8.1.7.16 <TY-TQLMT>..15-255
15.8.2 FEEDER..15-255
15.8.2.1 <Overview>..15-255
15.8.2.2 <FEED> 15-255

15.1 Outline

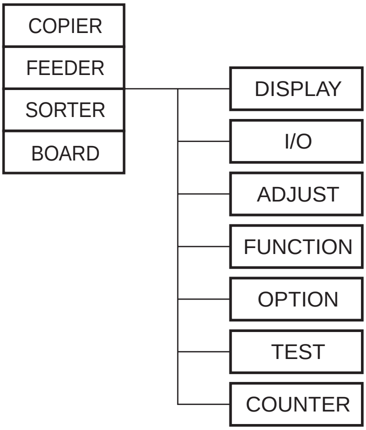
15.1.1 Construction of Service Mode

The machine's service mode has a 3-layer screen construction: Initial screen, Level 1/2 screen, and Level 3 screen. Its mode items are grouped into those used in regular maintenance work (Level 1 items) and those used in response to faults (Level 2 items).


User screen
(⊛)(2,8)(⊛)
Reset key
Initial screen (layer 1)
(⊛)(2)
Initial screen (layer 2)
Select an item.
Level 1/2 item screen (layer 1)
Select an item.
Level 1/2 item screen (layer 2)
Select a Level 1 item at the top of the screen.
Select a Level 2 item.
Level 3 item screen (layer 1)
Level 3 item screen (layer 1)
Previous/Next page
Select a Level 1 item at the top of the screen.
Select a Level 2 item.
Level 3 item screen (layer 2 item)
Level 3 item screen (layer 2)
Previous/Next page

F-15-1

The machine's service mode is divided into the following 7 types:


COPIER
FEEDER
SORTER
BOARD
DISPLAY
status indication mode
I/O
input/output indication mode
ADJUST
adjustment mode
FUNCTION
operation/inspection mode
OPTION
settings mode
TEST
test print mode
COUNTER
counter mode

F-15-2

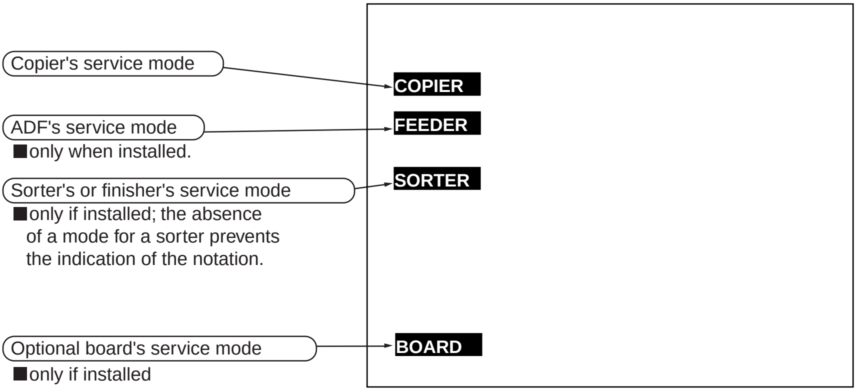
15.1.2 Starting Service Mode and Making Selections

⚠If you want to execute a machine operation using a service mode item, be sure to disconnect all cables from an external controller or a network before starting service mode. Particularly, if you are using a FUNCTION (operation/inspection) mode item, the arrival of a print job from an external source can cause the machine to malfunction, leading to damage.

---

1) Press the asterisk key "*" on the control panel.
2) Press the 2 and 8 keys of the keypad at the same time.
3) Press the asterisk key "*" on the control panel.

In response to the foregoing key operations, the machine will bring up the following Initial screen:


Copier's service mode
ADF's service mode
■only when installed.
Sorter's or finisher's service mode
■only if installed; the absence of a mode for a sorter prevents the indication of the notation.
Optional board's service mode
■only if installed
COPIER
FEEDER
SORTER
BOARD

F-15-3

15.1.3 Ending Service Mode

A press on the Reset key will bring back the Service Mode Initial screen.

Another press on the Reset key will end service mode, and bring back the User screen (standard screen).

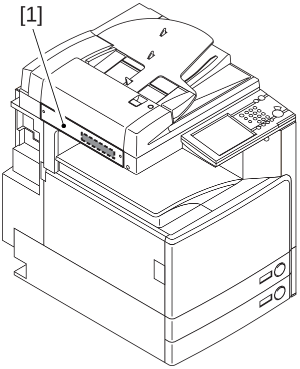
⚠If you used service mode (ADJUST, FUNCTION, OPTION), be sure to turn off and then on the main power switch after ending service mode.

15.1.4 Back-Up

At time of shipment from the factory, all machines are adjusted individually, and adjustment values are recorded in their respective service labels.

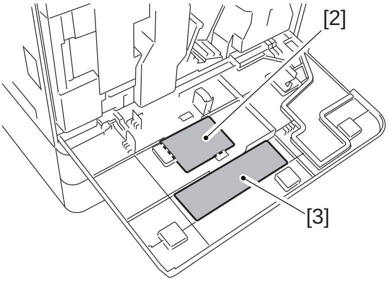
If you have replaced the reader controller PCB or the DC controller PCB, or if you have initialized the RAM, the adjustment values (for ADJUST and OPTION) will return to their default settings. If there has been any change in a service mode item, be sure to update its setting indicated on the service label. As necessary, make use of the space in the service label (as when recording an item not found on the label).

- Service Label for the Reader Controller PCB (behind the left cover [1] of the reader unit)



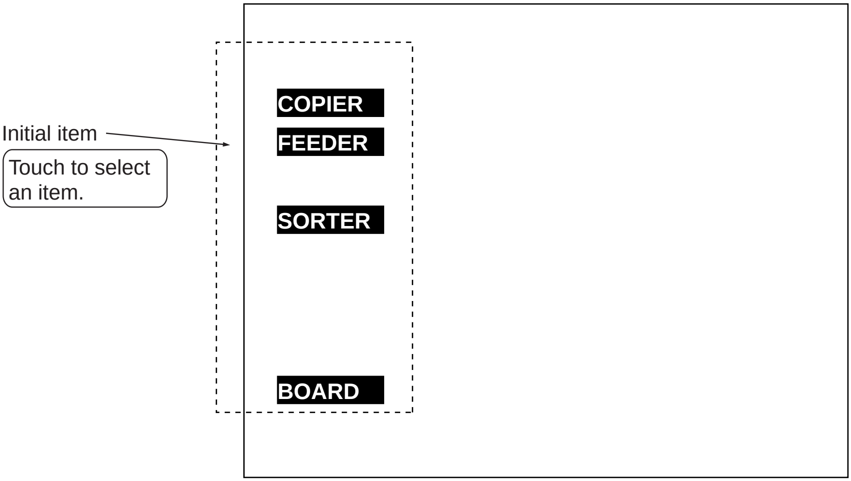
F-15-4

- Service Label [2] for the Main Controller PCB/DC controller PCB (behind the front cover of the printer unit)



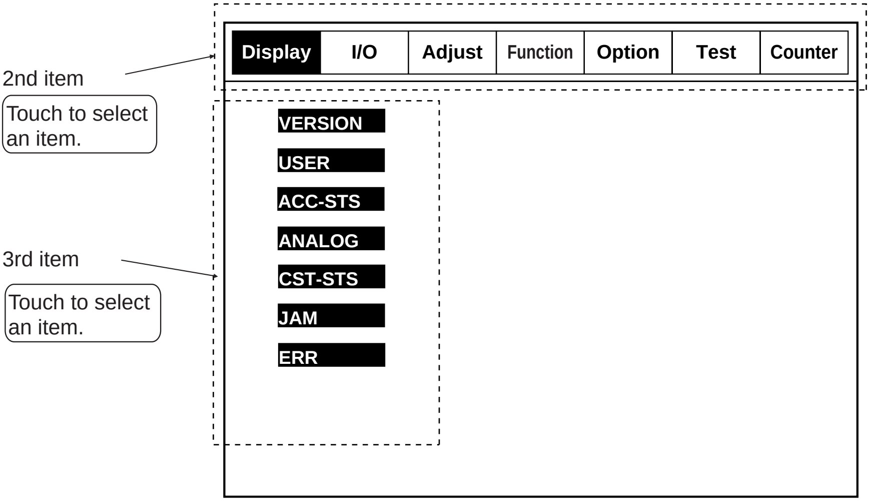
F-15-5

15.1.5 Initial Screen


Initial item
Touch to select an item.
COPIER
FEEDER
SORTER
BOARD

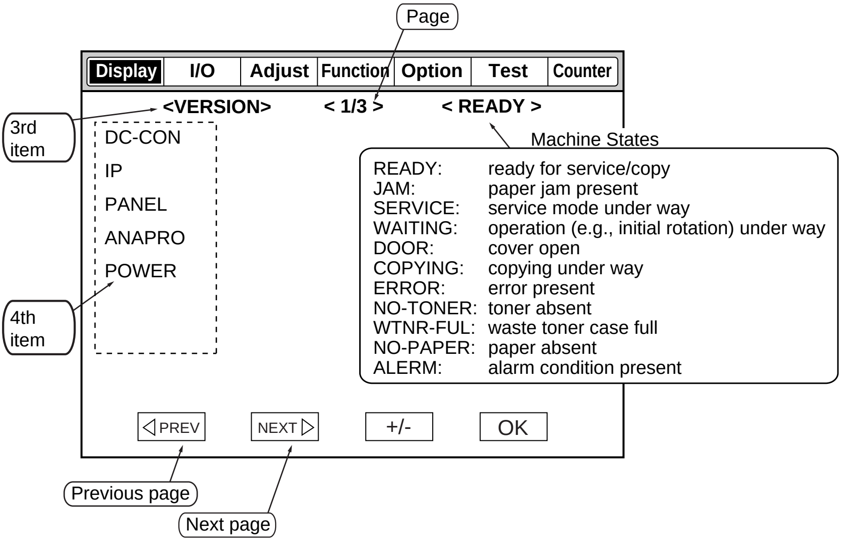
F-15-6

15.1.6 2nd/3rd Item Screen


2nd item
Touch to select an item.
3rd item
Touch to select an item.
Display
I/O
Adjust
Function
Option
Test
Counter
VERSION
USER
ACC-STS
ANALOG
CST-STS
JAM
ERR

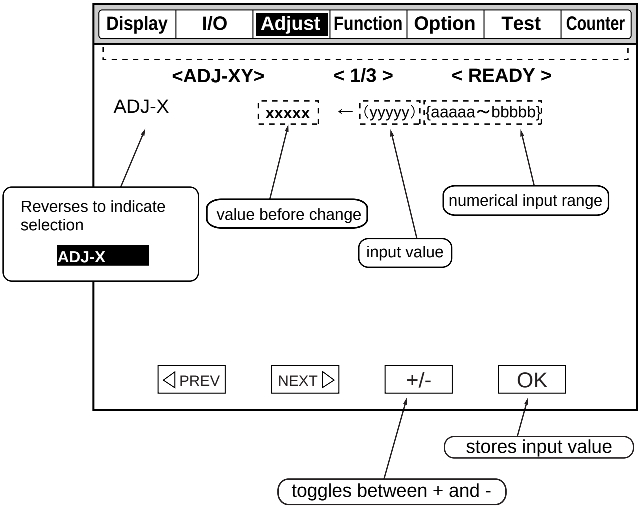
F-15-7

15.1.7 4th Item Screen


Page
Display
I/O
Adjust
Function
Option
Test
Counter
<VERSION>
< 1/3 >
< READY >
3rd item
DC-CON
IP
PANEL
ANAPRO
POWER
4th item
Machine States
PREV
NEXT
+/-
OK
Previous page
Next page

READY:	ready for service/copy
JAM:	paper jam present
SERVICE:	service mode under way
WAITING:	operation (e.g., initial rotation) under way
DOOR:	cover open
COPYING:	copying under way
ERROR:	error present
NO-TONER:	toner absent
WTNR-FUL:	waste toner case full
NO-PAPER:	paper absent
ALERM:	alarm condition present

F-15-8


Display
I/O
Adjust
Function
Option
Test
Counter
<ADJ-XY>
< 1/3 >
< READY >
ADJ-X
xxxxx
← (yyyyy) {aaaaa~bbbbb}
Reverses to indicate selection
ADJ-X
value before change
input value
numerical input range
PREV
NEXT
+/-
OK
stores input value
toggles between + and -

Stop key: press it to stop the ongoing operation.

Clear key: press to clear an input.

Start key: press to start copying without leaving service mode.

F-15-9

15.2 DISPLAY（Status Display Mode）

15.2.1 COPIER

15.2.1.1 VERSION

15.2.1.1.1 Overview

Use it to check the ROM version of individual PCBs (host machine and accessories).

- for example, in <R-CON XX.YY>, XX indicates the version and YY indicates R&D number.
- if no PCB is connected, the indication will be <--.-->.

15.2.1.1.2 <DC-CON>

Use it to check the ROM version of the DC controller PCB.

15.2.1.1.3 <R-CON>

Use it to check the ROM version of the reader controller PCB.

15.2.1.1.4 <PANEL>

Use it to check the ROM version of the control panel CPU PCB.

15.2.1.1.5 <ECO>

Use it to check the ROM version of the ECO PCB.

15.2.1.1.6 <FEEDER>

Uses it to check the ROM version of the DADF controller PCB.

15.2.1.1.7 <SORTER>

Use it to check the ROM version of the finisher controller PCB.

15.2.1.1.8 <FAX>

Use it to check the ROM version of the fax board.

15.2.1.1.9 <NIB>

Uses it to indicate the version of the network software.

15.2.1.1.10 <PS/PCL>

Use it to check the version of the UFR board (PS/PCL function).

15.2.1.1.11 <LIPS>

Use it to check the version of the UFR board (LIPS).

15.2.1.1.12 <SDL-STCH>

Use it to check the ROM version of the saddle stitcher controller PCB.

15.2.1.1.13 <OP-CON>

Use it to indicate the ROM version of the option controller PCB.

15.2.1.1.14 <MN-CON>

Use it to check the ROM version of the main controller PCB.

15.2.1.1.15 <BOOT-ROM>

Use it to check the boot ROM version of the main controller PCB.
- copier model/GDI-UFR model: xx.yyC
- LIPS mode: xx.yyL
- PS/PCL model: xx.yyN

15.2.1.1.16 <DIAG-DVC>

Use it to check the ROM version of the self-diagnosis device.

15.2.1.1.17 <RUI>

Use it to check the remote UI.

15.2.1.1.18 <PUNCH>

Use it to check the version of the punch unit.

15.2.1.1.19 <LANG-EN>

Use it to check the version of an English language file.

15.2.1.1.20 <LANG-FR>

Use it to check the version of a French language file.

15.2.1.1.21 <LANG-DE>

Use it to check the version of a German language file.

15.2.1.1.22 <LANG-IT>

Use it to check the version of an Italian language file.

15.2.1.1.23 <LANG-JP>

Use it to check the version of a Japanese language file.

15.2.1.1.24 <GDI-UFR>

Use it to check the version of the UFR board (GDI-UFR function).

15.2.1.2 ACC-STS

15.2.1.2.1 Overview

Use it to check the state of connection of accessories.

15.2.1.2.2 <FEEDER>

Use it to check the state of connection of a DADF:
0: not connected.
1: connected.

15.2.1.2.3 <SORTER>

Use it to check the state of connection of a finisher and punch unit.
0: not connected.
1: finisher connected.
2: saddle finisher connected.

15.2.1.2.4 <DECK>

Use it to check the state of connection of a paper deck.
0: not connected.
1: connected.

15.2.1.2.5 <CARD>

Use it to check the state of connection of a card reader:
0: card reader connected but card not inserted.
1: card reader not connected; or, card reader connected and card inserted
(indicates '1' if ready for copying; indicates '0' if not ready for copying)

15.2.1.2.6 <DATA-CON>

Use it to check the state of connection of a copy data controller.
0: not connected.
1: connected.

15.2.1.2.7 <RAM>

Use it to check the size of the memory mounted on the main controller PCB.
512MB, 768MB

15.2.1.2.8 <COINROBO>

Uses it to indicate the state of connection of a coin vendor.
0: not connected.
1: connected.

15.2.1.2.9 <NIB>

Use it to check the state of connection of a network board.
0: not connected.
1: Ethernet board connected.
2: TokenRing board connected.
3: Ethernet board and TokeRing board connected.

15.2.1.2.10 <NETWARE>

Use it to check the state of installation of network firmware.
0: not installed.
1: installed.

15.2.1.2.11 <SEND>

Use it to check the presence of the SEND function.
0: SEND function absent.
1: SEND function present.

15.2.1.3 ANALOG

15.2.1.3.1 Overview

Use it to check the measurements taken by analog sensors.

15.2.1.3.2 <TEMP>

Use it to check the machine inside temperature (environment sensor; in deg C).

15.2.1.3.3 <HUM>

Use it to check the machine inside humidity (environment sensor; in %RH).

15.2.1.3.4 <ABS-HUM>

Use it to check moisture content (environment sensor; in g).

15.2.1.3.5 <FIX-UC>

Use it to check the surface temperature of the middle of the fixing upper roller (as detected by the main thermistor; in deg C)

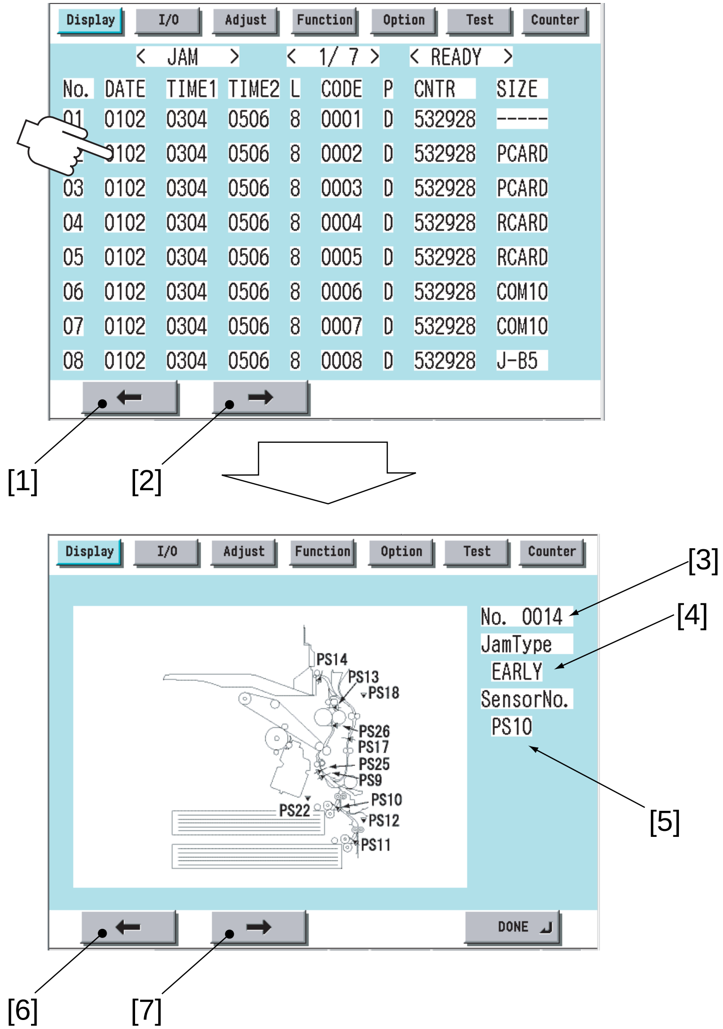
15.2.1.3.6 <FIX-UE>

Use it to check the surface temperature at the edge of the fixing upper roller (as detected by the sub thermistor; in deg C)

15.2.1.4 JAM

15.2.1.4.1 Overview

Use it to check jam data.


Display
I/O
Adjust
Function
Option
Test
Counter
←
→
[1]
[2]
Display
I/O
Adjust
Function
Option
Test
Counter
PS14
PS13
PS18
PS26
PS17
PS25
PS9
PS10
PS12
PS11
PS22
DONE
←
→
[3]
[4]
[5]
[6]
[7]

< JAM > < 1/ 7 > < READY >

No.	DATE	TIME1	TIME2	L	CODE	P	CNTR	SIZE
01	0102	0304	0506	8	0001	D	532928	-----
	0102	0304	0506	8	0002	D	532928	PCARD
03	0102	0304	0506	8	0003	D	532928	PCARD
04	0102	0304	0506	8	0004	D	532928	RCARD
05	0102	0304	0506	8	0005	D	532928	RCARD
06	0102	0304	0506	8	0006	D	532928	COM10
07	0102	0304	0506	8	0007	D	532928	COM10
08	0102	0304	0506	8	0008	D	532928	J-B5

No. 0014
JamType
EARLY
SensorNo.
PS10

F-15-10

Touch any Jam Indication screen to go to the detailed screen of that particular type of jam.

1. press to go to the previous page.
2. press to go to the next page.
3. indicates the order of occurrence of the jam in question.
4. indicates the type of jam.
6. press to go to the previous Jam Indication screen.
7. press it to go to the next Jam Indication screen.

15.2.1.4.2 <No.>

Indicates the order of occurrence of the jam in question.
1 through 50 (the higher the number, the older the jam)

15.2.1.4.3 <DATE>

Indicates the date of the jam in question.

15.2.1.4.4 <TIME1>

Indicates the time of the jam in question.

15.2.1.4.5 <TIME2>

Indicates the jam recovery time.

15.2.1.4.6 <L>

Indicates the location of the jam in question.

T-15-1

Code	**Location/classification**
0	host machine
1	feeder
2	finisher

15.2.1.4.7 <CODE>

Jam Code (See the list of jam codes.)

15.2.1.4.8 <P>

Indicates the source of paper used.

T-15-2

Code	Description
1	cassette 1
2	cassette 2
3	cassette 3
4	cassette 4
5	side paper deck
6	manual feed tray
7	duplexing unit

15.2.1.4.9 <CNTR>

Indicates the reading of the soft counter for the source of paper.

15.2.1.4.10 <SIZE>

Indicates the size of paper.

15.2.1.4.11 Jam Code (jam type)

T-15-3

Code	Type of jam
01xx	delay jam
02xx	stationary jam
0Axx	residnal jam
0B00	door open jam
0B01	door open jam (detection by software)
0D91	size mismatch (paper shorter than specified size)
0D92	medium mismatch (paper instead of transparency)
0D93	medium mismatch (transparency instead of paper)

15.2.1.4.12 Jam Code (printer unit)

T-15-4

Code	Sensor type	Sensor No.
xx01	cassette 1 retry sensor	PS10
xx02	cassette 2 retry sensor	PS11
xx03	cassette 3 retry sensor	PS1 (cassette pedestal)
xx04	cassette 4 retry sensor	PS2 (cassette pedestal)
xx05	pre-registration sensor	PS9
xx06	fixing inlet sensor (residual paper only)	PS25
xx07	fixing inside delivery sensor	PS13
xx08	No. 1 delivery sensor	PS14
xx09	No. 2 delivery sensor	PS1A (2/3 delivery unit)
xx0A	No. 3 reversal sensor	PS4A (2/3 delivery unit)
xx0B	No. 3 delivery sensor	PS5A (2/3 delivery unit)
xx0C	duplex inlet sensor	PS3A (2/3 delivery unit)
xx0D	duplex re-pickup sensor	PS17
xx0E	deck retry sensor	PS6D (side paper deck)
xx0F	deck pull-off sensor	PS1D (side paper deck)
xx10	multifeeder pickup sensor (no activation)	
xx11	buffer inlet sensor	PS1B (buffer path unit)
xx12	buffer outlet sensor	PS2B (buffer path unit)

15.2.1.4.13 Jam Code (finisher-related)

T-15-5

Code	Sensory type	Sensor No.
1011	delivery sensor feed delay jam	SR1 (Finisher-P1)
1101	delivery sensor feed stationary jam	
1500	staple jam	
1300	power-on jam	
1400	door open jam	

T-15-6

Code	Sensor type	Sensor No.
1001	inlet path sensor feed delay jam	P13
1002	punch path sensor (punch registration sensor) feed delay jam	LED5/PTR5
1004	delivery path sensor feed delay jam	P14
1101	inlet path sensor feed stationary jam	P13
1102	punch path sensor (punch registration sensor) feed stationary jam	LED5/PTR5
1104	delivery path sensor feed stationary jam	P14
1200	timing jam	P13
1500	stapler staple jam	STP
1300	power-on jam	P13,P14
1400	door open jam	DOOR
1644	punch jam	LED5/PTR5

Code	Sensor type	Sensor No.
1645	punch power-on jam	LED5/PTR5
1791	saddle feed sensor feed delay jam	P18S, PI19S, PI20S
1792	saddle delivery sensor feed delay jam	PI11S
1793	saddle inlet sensor feed delay jam	PI22S
17A1	saddle feed sensor feed stationary jam	P18S, PI19S, PI20S
17A2	saddle delivery sensor feed stationary jam	PI11S, PI17S
17A3	saddle inlet sensor feed stationary jam	PI22S
1786	saddle staple jam	S STP
1787	saddle power-on jam	PI11S, PI18S, PI19S, PI20S, PI22S
1788	saddle door open jam	DOOR

15.2.1.4.14 Jam Code (ADF-related)

T-15-7

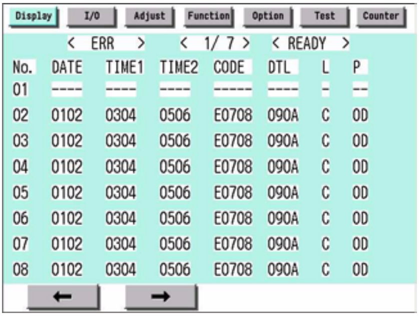
Code	Sensor type	Sensor No.	Description
0003	registration sensor delay	PI2	The registration sensor does not detect paper within 1.5 sec after pickup takes place. At time of reversal, the registration sensor does not detect paper when the read motor has rotated for a specific period of time.
0004	registration sensor stationary	PI2	After the registration sensor goes on, it does not go off when the paper has been moved for an equivalent of 500 mm (if long paper, 700 mm).
0005	read sensor delay	PI2, PI3	After the pickup request signal is received from the reader, the read sensor does not detect paper when the feed motor has rotated for a specific period of time.
0006	read sensor stationary	PI3	After the read sensor goes on, the sensor does not go off after the paper has been moved for an equivalent of 500 mm (if long paper, 70 mm).

Code	Sensor type	Sensor No.	Description
0007	delivery sensor delay	PI3, PI4	After the read request signal is received from the reader, the delivery sensor does not detect paper when the read motor has rotated for a specific period of time.
0008	delivery sensor stationary	PI4	After the delivery sensor goes on, the sensor does not go off when paper has been moved for an equivalent of 500 mm (if long paper, 700 mm).
0044	1st sheet registration sensor stationary	PI2	A registration sensor stationary jam has been identified for the 1st original.
0045	1st sheet read sensor delay	PI2, PI3	A read sensor delay jam has been identified for the 1st original.
0046	1st sheet read sensor stationary	PI3	A read sensor stationary jam has been identified for the 1st original.
0047	1st sheet delivery sensor delay	PI3, PI4	A delivery sensor delay jam has been identified for the 1st original.
0048	1st sheet delivery sensor stationary	PI4	A delivery sensor stationary jam has been identified for the 1st original.
0071	timing error	-	A software sequence fails to end normally within a specific period of time.
0090	ADF open	PI1	While the machine is in operation (drive system in operation), the ADF is opened.
0091	user ADF open	PI1	While the machine is in operation (drive system at rest), the ADF is opened.
0092	ADF cover open	PI10	While the machine is in operation (drive system in operation), the ADF cover is opened.
0093	user cover open	PI10	While the machine is in operation (drive system at rest), the ADF cover is opened.
0094	initial stationary	PI2, PI3, PI4	While the 1st sheet is being picked, paper is detected within the feeder.
0095	pickup fault	-	With no paper in the tray, the pickup signal is received for 2 sec.

15.2.1.5 ERR

15.2.1.5.1 Overview

Use it to check error data.



< ERR > < 1/ 7 > < READY >

No.	DATE	TIME1	TIME2	CODE	DTL	L	P
01	----	----	----	-----	----	-	--
02	0102	0304	0506	E0708	090A	C	0D
03	0102	0304	0506	E0708	090A	C	0D
04	0102	0304	0506	E0708	090A	C	0D
05	0102	0304	0506	E0708	090A	C	0D
06	0102	0304	0506	E0708	090A	C	0D
07	0102	0304	0506	E0708	090A	C	0D
08	0102	0304	0506	E0708	090A	C	0D

F-15-11

15.2.1.5.2 <No.>

Indicates the order of occurrence of the error in question.
1 to 50 (the higher the number, the older the error)

15.2.1.5.3 <DATE>

Indicates the date of the error in question.

15.2.1.5.4 <TIME1>

Indicates the time of the error in question.

15.2.1.5.5 <DATE2>

Indicates the error return time.

15.2.1.5.6 <CODE>

Indicates the cover of the error in question.

15.2.1.5.7 <DTL>

Indicates the detail code of the error in question. (if not, '0000')

15.2.1.5.8 <L>

T-15-8

Location Classification

0: main controller

1: DADF

2: finisher

3: not used

4: reader unit

5: printer unit

6: PDL board (any of)

7: fax board

15.2.1.5.9 <P>

not used

15.2.1.6 DENS

15.2.1.6.1 Overview

Use it to check the concentration of developer inside the developing assembly.

15.2.1.6.2 <DENS-Y>

T-15-9

	Use it to check the computed value of the density (Y) of the patch formed on the photosensitive drum. (indicates the discrepancy from the target value in %)
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	-25 to +25

15.2.1.6.3 <DENS-M>

T-15-10

	Use it to check the computed value of the density (M) of the patch formed on the photosensitive drum. (indicates the discrepancy from the target value in %)
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	-25 to +25

15.2.1.6.4 <DENS-C>

T-15-11

	Use it to check the computed value of the density (C) of the patch formed on the photosensitive drum. (indicates the discrepancy from the target value in %)
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	-25 to +25

15.2.1.6.5 <DENS-K>

T-15-12

	Use it to check the computed value of the density (K) of the patch formed on the photosensitive drum. (indicates the discrepancy from the target value in %)
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	-25 to +25

15.2.1.6.6 <REF-Y/M/C>

T-15-13

	Use it to check the density standard (Y/M/C) of the developer on the developing cylinder.
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	464 to 560

15.2.1.6.7 <SGNL-Y/M/C>

T-15-14

	Use it to check the measurement (Y/M/C) of the density of the developer on the developing cylinder.
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	225 to 863

15.2.1.6.8 <P-SENS-P>

T-15-15

	Use it to check the measurement (for P wave component) of the soiling of the window of the patch image sensor. The value effective when the machine executes patch image detection operation after the main power switch is turned on is indicated. **(range of indications: 0 to 1023)**
Reference	In the case of 255 or lower, the indication will be E020-0081.
Optimum	400 to 600

15.2.1.7 MISC

15.2.1.7.1 Overview

Others

15.2.1.7.2 <DRM-LIFE>

T-15-16

	Use it to check the age of the drum unit.
	Indicates how much it has been used in %.
Optimum	0 to 100 (unit: %)

15.2.1.8 ALARM-1

15.2.1.8.1 Overview

Use it to check the image ratio of the images formed using individual colors.

15.2.1.8.2 <IMG-DT-Y>

Use it to check the average of the image ratios of the images formed using yellow.

15.2.1.8.3 <IMG-DT-M>

Use it to check the average of the image ratios of the images formed using magenta.

15.2.1.8.4 <IMG-DT-C>

Use it to check the average of the image ratios of the images formed using cyan.

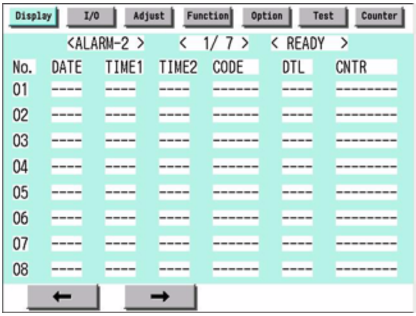
15.2.1.8.5 <IMG-DT-K>

Use it to check the average of the image ratios of the images formed using black.

15.2.1.9 ALARM-2

15.2.1.9.1 Overview

Use it to check alarm data.



<ALARM-2 > < 1/ 7 > < READY >

No.	DATE	TIME1	TIME2	CODE	DTL	CNTR
01	----	----	----	------	----	--------
02	----	----	----	------	----	--------
03	----	----	----	------	----	--------
04	----	----	----	------	----	--------
05	----	----	----	------	----	--------
06	----	----	----	------	----	--------
07	----	----	----	------	----	--------
08	----	----	----	------	----	--------

F-15-12

T-15-17

Item	Description	Remarks
No.	indicates the order of occurrence of alarms (1 through 50; the higher the number, the older the error).	
DATE	indicates the date of the alarm in question.	
TIME1	indicates the time of the alarm in question.	
TIME2	indicates the alarm recovery time.	
CODE	indicates the code of the location at which the alarm in question occurred. (See the table on next page.)	
	indicates the code of the alarm in question. (See the table on next page.)	

Item	Description	Remarks
DTL	Indicates the detail code of the alarm in question. (See the table on next page.)	
CNTR	indicates the total counter reading at the time of the alarm in question.	

T-15-18

Location code	Alarm code	
02 scanner	0002	indicates the presence of dirt on the glass for stream reading.
	0020	line correction alarm (upon detection of dust on the stream reading glass between originals)
04 pickup/feed	0001	cassette 1 lifter error
	0002	cassette 2 lifter error
	0003	cassette 3 lifter error
	0004	cassette 4 lifter error
	0008	optional deck lifter error
33 fan	0011	fixing heat discharge fan
50 ADF	0010	indicates that the original separation alarm condition has occurred 3 times in sequence (i.e., faulty pickup of the 1st original).
61 finisher	0001	staple absent
62 saddle stitcher	0001	stitch staple absent
65 puncher	0001	punch waste case full

15.2.1.10 ENVRNT

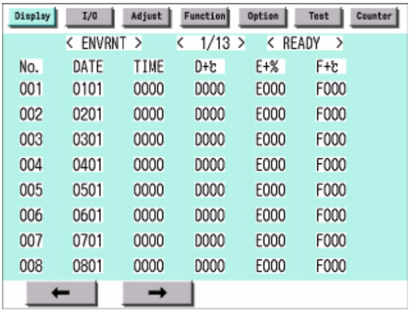
15.2.1.10.1 Overview

Displaying Environment Logs

Use it to indicate logs of changes that may have taken place for [machine inside temperature (deg C)/humidity (%)/fixing roller surface (middle) temperature (deg C)] collected from the monitor output of the fixing thermistor (main) and the environment sensor.

Remarks

The intervals of data collection may be set in service mode: COPIER>OPTION>BODY>ENVP-IN.



No.	DATE	TIME	D+℃	E+%	F+℃
001	0101	0000	D000	E000	F000
002	0201	0000	D000	E000	F000
003	0301	0000	D000	E000	F000
004	0401	0000	D000	E000	F000
005	0501	0000	D000	E000	F000
006	0601	0000	D000	E000	F000
007	0701	0000	D000	E000	F000
008	0801	0000	D000	E000	F000

F-15-13

T-15-19

Item	Description
No.	number of a data piece (higher the number, older the data piece)
DATE	date of data collection
TIME	time of data collection
D + deg C	machine inside temperature
E + %	machine inside humidity
F + deg C	fixing roller surface (middle) temperature

15.2.2 FEEDER

15.2.2.1 Overview

Use it to check a feeder-related state.

15.2.2.2 <FEEDSIZE>

T-15-20

	Use it to check the size of the original detected by the ADF.
Reference	Indicates the detection in terms of paper size (e.g., A4, LTR).

15.2.2.3 <TRY-WIDE>

Use it to check the original pickup tray width of the DF.

15.2.3 DISPLAY(Status Display Mode)Level2

15.2.3.1 COPIER

15.2.3.1.1 VERSION

<LANG-CS>

Use it to check the version of the Czech language file.

<LANG-DA>

Use it to check the version of the Danish language file.

<LANG-EL>

Use it to check the version f the Greek language file.

<LANG-ES>

Use it to check the version of the Spanish language file.

<LANG-ET>

Use it to check the version of the Estonian language file.

<LANG-FI>

Use it to check the version of the Finnish language file.

<LANG-HU>

Use it to check the version of the Hungarian language file.

<LANG-KO>

Use it to check the version of the Korean language file.

<LANG-NL>

Use it to check the version of the Dutch language file.

<LANG-NO>

Use it to check the version of the Norwegian language file.

<LANG-PL>

Use it to check the version of the Polish language file.

<LANG-PT>

Use it to check the version of the Portuguese language file.

<LANG-RU>

Use it to check the version of the Russian langue file.

<LANG-SL>

Use it to check the version of the Slovenian language file.

<LANG-SV>

Use it to check the version of the Swedish language file.

<LANG-TW>

Use it to check the version of the Chinese language file (traditional text).

<LANG-ZH>

Use it to check the version of the Chinese language file (simplified text).

<ECO-ID>

Use it to check the ECO-ID number

<LANG-BU>

Use it to check the version of the Bulgarian language file.

<LANG-CR>

Use it to check the version of the Croatian language file.

<LANG-RM>

Use it to check the version of the Romanian language file.

<LANG-SK>

Use it to check the version of the Slovakian language file.

<LANG-TK>

Use it to check the version of the Turkish language file.

15.2.3.1.2 CST-STS

<WIDTH-MF>

Use it to check the width of paper in the manual feed tray (in mm).

15.2.3.1.3 HV-STS

<1ATVC-Y>

Use it to check the value of the current measured at time of primary transfer ATVC (Y; in yA).

<1ATVC-M>

Use it to check the value of the current measured at time of primary transfer ATVC (M; in yA).

<1ATVC-C>

Use it to check the value of the current measured at time of primary transfer ATVC (C; in yA).

<1ATVC-K4>

Use it to check the value of the current measured at time of primary transfer ATVC (K for full color mode; in yA).

<1ATVC-K1>

Use it to check the value of the current measured at time of primary transfer ATVC (in mono color mode; in yA).

15.2.3.1.4 CCD

<TARGET-B>

Use it to check the shading target value for B.

<TARGET-G>

Use it to check the shading target value for G.

<TARGET-R>

Use it to check the shading target value for R.

<OFST>

Use it to check the offset level adjustment value for the CCD.

<GAIN>

Use it to check the gain level adjustment for the CCD.

<MFIL>

Use it to check the MTF correction index for main scanning direction. (for design analysis)

<SFIL>

Use it to check the MTF correction index for sub scanning direction. (for design analysis)

15.2.3.1.5 DPOT

<VCONT-Y>

Use it to check the current value of the target contrast potential (Y).

<VCONT-M>

Use it to check the current value of the target contrast potential (M).

<VCONT-C>

Use it to check the current value of the target contrast potential (C).

<VCONT-K>

Use it to check the current value of the target contrast potential (K).

<VBACK-Y>

Use it to check the current value of the defogging potential (Y).

<VBACK-M>

Use it to check the current value of the defogging potential (M).

<VBACK-C>

Use it to check the current value of the defogging potential (C).

<VBACK-K>

Use it to check the current value of the defogging potential (K).

<2TR-PPR>

Use it to check the output value of the paper separation voltage of the secondary transfer DC voltage generated last.

<2TR-BASE>

Use it to check the output value of the reference voltage of the secondary transfer DC voltage generated last.

<1TR-DC-Y>

Use it to check the output value of the primary transfer DC voltage (Y) generated last.

<1TR-DC-M>

Use it to check the output value of the primary transfer DC voltage (M) generated last.

<1TR-DC-C>

Use it to check the output value of the primary transfer DC voltage (C) generated last.

<1TR-DC-K>

Use it to check the output value of the primary transfer DC voltage (K) generated last.

15.2.3.1.6 DENS

<DENS-S-Y/M/C/K>

Use it to check the density value (Y/M/C/Bk) detected of the sample image formed at time of ATR control.

<D-Y/M/C-TRGT>

Use it to check the target value (Y/M/C) of the developer density.

<DEV-DC-Y/M/C/K>

Use it to check the output value of the developing DC voltage (Y/M/C/Bk) generated last.

<CHG-DC-Y/M/C/K>

Use it to check the output value of the primary DC voltage (Y/M/C/Bk) generated last.

<D-K-TRGT>

Use it to check the target value (Bk) of the developer density.

<D-CRNT-P/S>

Uses it to indicate the value (P wave/S wave) measured of the dark current at time of ATR control.

<P-SENS-S>

Use it to check the value (S wave) detected of the intensity of light from the background (drum) at time of ATR control.

<DENS-Y/M/C-H>

Use it to check the history of measurements taken by the ATR sensor (Y/M/C; latest 8 measurements).

<DS-S-Y/M/C/K-H>

Use it to check the history of the results of detection of patch images (Y/M/C/K; latest 8 result).

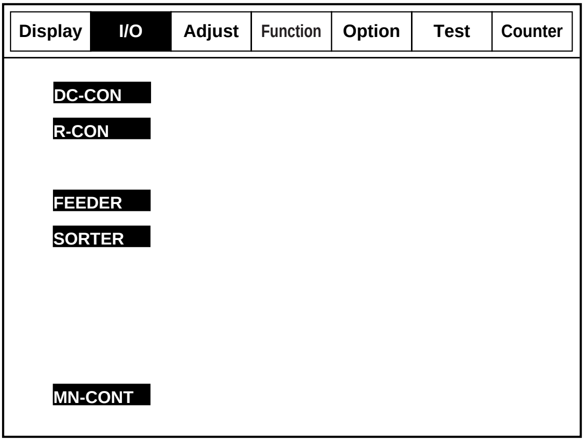
<P-LED-DA>

Use it to check the D/A settings of the LED for the path image sensor.

15.3 I/O （I/O Display Mode）

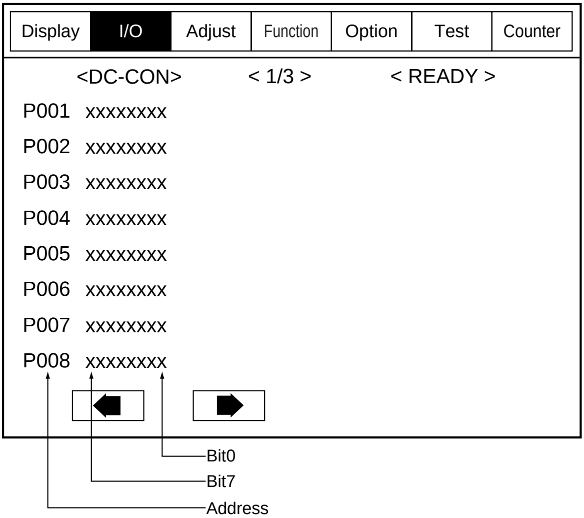
15.3.1 Overview

The following appears in response to COPIER>I/O; descriptions of the items (limited to those needed in the field) area given on the pages that follow:


Display
I/O
Adjust
Function
Option
Test
Counter
DC-CON
R-CON
FEEDER
SORTER
MN-CONT

F-15-14

<Guide to the Screen>



Display
I/O
Adjust
Function
Option
Test
Counter
<DC-CON>
< 1/3 >
< READY >
P001 xxxxxxxx
P002 xxxxxxxx
P003 xxxxxxxx
P004 xxxxxxxx
P005 xxxxxxxx
P006 xxxxxxxx
P007 xxxxxxxx
P008 xxxxxxxx
Bit0
Bit7
Address

F-15-15

15.3.2 <DC-CON>

T-15-21

Address	Bit	Description	Remarks
P001	0	cassette 2 retry sensor	1 detected
	1	cassette 2 level B sensor	1 about 50 sheets or less
	2	cassette 2 level A sensor	1 about half or less
	3	cassette 2 paper sensor	1 paper absent
	4	cassette 1 retry sensor	1 detected
	5	cassette 1 level B sensor	1 about 50 sheets or less
	6	cassette 1 level A sensor	1 about half or less
	7	cassette 1 paper sensor	1 paper absent
	8-15	not used	

Address	Bit	Description	Remarks
P002	0	13 V detection (door open detection)	1 door open
	1	24 V detection (door open detection)	1 door open
	2	manual feed tray paper sensor	0 paper present
	3	duplex feed sensor (PS17)	1 paper present
	4	No. 1 delivery full sensor (PS15)	0 paper present
	5	No. 1 delivery sensor (PS14)	1 paper present
	6	fixing delivery sensor (PS13)	1 paper present
	7	pre-registration sensor (PS9)	1 paper present
	8-15	not used	
P003	0	patch detection LED-ON	1 ON
	1	ITB fan half-speed	1 half speed
	2	exhaust fan 1 half speed (machine rear)	1 half speed
	3	for R&D	
	4	cassette 1 size detection indication	alternates 1/0
	5	cassette 2 size detection indication	alternates 1/0
	6-7	for R&D	
	8-15	not used	
P004	0	toner supply clutch	1 ON
	1	ITB cleaner drive clutch	1 ON
	2	sleeve drive clutch (CL3)	1 ON
	3	secondary transfer swing clutch (CL9)	1 ON
	4	duplex feed clutch (CL6)	1 ON
	5	registration clutch (CL2)	1 ON
	6	manual feed pickup clutch (CL1)	1 ON
	7	heat retention heater ON	1 ON
	8-15	not used	
P005	0	exhaust fan 1 full speed (machine rear)	1 ON
	1	ITB fan full speed	1 ON
	2	for R&D	

Address	Bit	Description	Remarks
	3	transparency sensor ON	1 ON
	4	ITBHPLED_ON	1 ON
	5	for R&D	
	6	pickup 2 solenoid (SL2)	1 ON
	7	pickup 1 solenoid (SL1)	1 ON
	8-15	not used	
P006	0-1	for R&D	
	2	exhaust fan 2 full speed (machine front)	1 ON
	3	exhaust fan 2 full speed (machine front)	1 ON
	4	feed door sensor	0 door closed
	5	fixing inlet sensor	1 ON
	6	pickup unit door sensor	0 door closed
	7	front door sensor	0 door closed
	8-15	not used	
P007	0-7	for R&D	
	8-15	not used	
P008	0	DIP SW0	1 ON
	1	DIP SW1	1 ON
	2-3	for R&D	
	4	delivery toner sensor	1 detected
	5	ITB fan lock detection	1 detected
	6	exhaust fan R lock detection	1 detected
	7	exhaust fan F lock detection	1 detected
	8-15	not used	
P009	0	cassette size detection 0 (alternately indicates cassettes 1 and 2)	1 ON
	1	cassette size detection 1 (alternately indicates cassettes 1 and 2)	1 ON
	2	cassette size detection 2 (alternately indicates cassettes 1 and 2)	1 ON

Address	Bit	Description	Remarks
	3	cassette size detection 3 (alternately indicates cassettes 1 and 2)	1 ON
	4	cassette size detection 4 (alternately indicates cassettes 1 and 2)	1 ON
	5-7	for R&D	
	8-15	not used	
P010	0	toner fan lock detection	0 detected
	1	fixing fan lock detection	0 detected
	2	reserved	
	3-7	for R&D	

T-15-22

Address	Bit	Description	Remarks
P011	0-7	for R&D	
P012	0	for R&D	
	1-5	for R&D	
	6-7	not used	
P013	0-7	for R&D	
P014	0	for R&D	
	1-6	for R&D	
	7	not used	
P015	0-7	for R&D	
P016	0-4	not used	
	5-6	for R&D	
	7	not used	
P017	0	fixing motor lock	1 ON
	1	fixing speed switch-over	1 half speed
	2	fixing motor ON	1 ON
	3-7	for R&D	

Address	Bit	Description	Remarks
P018	0	LED	
	1-4	for R&D	
	5-7	not used	
P019	0-2	not used	
	3	for R&D	
	4	100V/200V detect	1 100V
	5-7	not used	
P020	0-1	for R&D	
	2	ATR solenoid	1 ON
	3	for R&D	
	4-7	not used	
P021	0-4	not used	
	5	for R&D	
	6-7	for R&D	
P022 to 029		reserved	

15.3.3 <R-CON>

iR C3100

T-15-23

Address	Bit	Description	Remarks
P001	0-4	not used	
	5	CIS power-on signal	1:ON
	6	for R&D	
	7	size sensor drive single	1: ON
P002	0	not used	
	1	24V power supply monitor signal	0: normal

Address	Bit	Description	Remarks
	2	scanner motor drive single	1: forward 0: reverse
	3-4	for R&D	
	5	13V power supply monitor signal	0: normal
	6	not used	
	7	for R&D	
P003	0-3	for R&D	
	4	LED control signal	1: ON
	5-7	for R&D	
P004	0-1	not used	
	2	original size detection 2	0: original present
	3-4	not used	
	5-6-7	for R&D	
	7	not used	
P005	0-7	for R&D	
P006	0	not used	
	1-3	for R&D	
	4	ADF sensor read input	0: ON
	5	copyboard open/closed sensor interrupt input 0	1: closed
	6	HP sensor interrupt input	1: HP
	7	copyboard open/closed sensor interrupt input 1	1: closed
P007	0-3	for R&D	
	4	scanner motor drive power saving	0: ON
	5	ADF pickup motor clock interrupt input	alternately 0/1
	6	ADF motor clock interrupt input	alternately 0/1
	7	not used	
P008	0	lamp ON signal	1: ON
	1	CIS drive ON signal	1: ON
	2-7	for R&D	
P009	0-7	for R&D	

15.3.4 <FEEDER>

T-15-24

Address	Bit	Description	Remarks
P001	0	read sensor	1: detected
	1	pre-registration sensor	1: detected
P002	0-3	not used	
	4	stamp solenoid	1: ON
	5	not used	
	6	original detection LED	1: ON
	7	not used	
P003	0-7	for R&D	
P004	0	original sensor	1: detected
	1	cover sensor	1: detected
	2-7	not used	
P005	0	cycle end sensor	1: detected
	1	length sensor 2	1: detected
	2	length sensor 1	1: detected
	3	A4/LTR identification sensor	1: detected
	4-5	not used	
	6	delivery sensor	0: detected
	7	DF open sensor	1: detected
P006	0-7	for R&D	
P007	0-7	for R&D	
P008	0-7	for R&D	
P009	0-7	for R&D	
P010	0-7	for R&D	
P011	0-7	for R&D	

15.3.5 <SORTER>

T-15-25

Address	Controller	Bit	Description	Remarks
P001	STACKER	0	inlet feed motor A	
		1	inlet feed motor B	
		2	inlet feed motor A-	
		3	inlet feed motor B-	
		4	inlet feed motor switch 0	0: ON
		5	inlet feed motor switch 1	0: ON
		6	inlet feed/stack delivery motor standby signal	1: ON
		7	common solenoid ON signal	0: ON
P002	STACKER	0	punch feed motor A	
		1	punch feed motor A-	
		2	punch feed motor B	
		3	punch feed motor B-	
		4	punch feed motor current switch 0	1: ON
		5	punch feed motor current switch 1	1: ON
		6	tray 2 motor clock	
		7	tray 1 motor clock	
P003	STACKER	0-3	for R&D	
		4-7	not used	
P004	STACKER	0	saddle connection detection signal	0: ON
		1	not used	
		2	swing HP sensor	1: ON
		3	upper cover open/closed sensor	0: ON
		4	front cover open/closed sensor	0: ON
		5	front cover interlock sensor	1: ON
		6	gear change HP sensor	1: ON

Address	Controller	Bit	Description	Remarks
		7	not used	
P005	STACKER	0-1	for R&D	
		2	punch transmission request signal	0: ON
		3	saddle 13V ON signal	1: ON
		4-7	not used	
P006	STACKER	0	punch connection detection	0: ON
		1-2	not used	
		3	punch motor standby	1: ON
		4	inlet sensor (IRQ0)	1: ON
		5	paper trailing edge sensor (IRQ1)	1: ON
		6	punch communication input (IRQ2)	0: ON
		7	not used	
P007	STACKER	0	tray approach sensor	0: ON
		1	tray 2 area sensor 1	0: ON
		2	tray 2 area sensor 2	0: ON
		3	tray 2 area sensor 3	0: ON
		4	tray 2 paper sensor	1: ON
		5	tray 2 paper surface sensor	1: ON
		6	inlet motor lock sensor	
		7	stack edging motor lock input	
P008	STACKER	0	tray 3 paper sensor	1: ON
		1	tray 3 connection detection	0: ON
		2	upper paper surface sensor	1: ON
		3	tray 1 interlock sensor	1: ON
		4	tray 1 area sensor 1	0: ON
		5	tray 1 area sensor 2	0: ON
		6	tray 1 area sensor 3	0: ON
		7	tray 1 paper sensor	1: ON
P009	STACKER	0	tray 1 shift motor CW	0: ON

Address	Controller	Bit	Description	Remarks
		1	tray 1 shift motor enable	1: ON
		2	tray 1 shift motor power supply switch 0	0: ON
		3	tray 1 shit motor current switch 1	0: ON
		4	tray 2 shift motor CW	0: ON
		5	tray 2 shit motor enable	1: ON
		6	tray 2 shift motor power supply switch 0	0: ON
		7	tray 2 shift motor power supply switch 1	0: ON
P010	STACKER	0	not used	
		1	swing lock motor power supply switch 0	0: ON
		2	swing lock motor phase A pulse output	
		3	swing lock motor phase B pulse output	
		4-7	not used	
P011	STACKER	0	input roller drive (away) solenoid	1: ON
		1-2	for R&D	
		3	buffer roller drive (away) solenoid	1: ON
		4	feed path sensor	1: ON
		5-7	not used	
P012	STACKER	0	gear change phase A	
		1	gear change phase B	
		2	gear change motor current switch 0	0: ON
		3	gear change motor current switch 1	0: ON
		4	not used	
		5-7	for R&D	
P013	STACKER	0	for R&D	
		1	front alignment HP sensor	1: ON
		2	front alignment HP sensor	1: ON
		3	handling tray paper sensor	1: ON
		4	trailing edge assist HP sensor	1: ON
		5-7	not used	

Address	Controller	Bit	Description	Remarks
P014	STACKER	0	rear alignment motor phase A	
		2	rear alignment motor phase B	
		3	rear alignment motor current switch 0	0: ON
		4-7	not used	
P015	STACKER	0	front alignment phase A	
		1	front alignment phase B	
		2	front alignment motor current switch 0	0: ON
		3-7	not used	

T-15-26

Address	Controller	Bit	Description	Remarks
P016	STACKER	0-4	not used	
		5	CIS power-on signal	1:ON
		6	for R&D	
		7	size sensor drive signal	1: ON
P017	STACKER	0	not used	
		1	24V power supply monitor signal	0: normal
		2	scanner motor drive signal	1: forward 0: reverse
		3-4	for R&D	
		5	13V power supply monitor signal	0: normal
		6	not used	
		7	for R&D	
P018	STACKER	0-7	for R&D	
		4	LED control signal	1: ON
		5-7	for R&D	
P019	STACKER	0-1	not used	
		2	original size detection 2	0: original present
		3-4	not used	

Address	Controller	Bit	Description	Remarks
		5-6	for R&D	
		7	not used	
P020	STACKER	0-7	for R&D	
P021	STACKER	0	not used	
		1-3	for R&D	
		4	ADF sensor interrupt input	0: ON
		5	copyboard cover open/closed sensor input 0	1: closed
		6	HP sensor interrupt input	1: HP
		7	copyboard open/closed sensor interrupt input 1	1: closed
P022	STACKER	0-3	for R&D	
		4	scanner motor driver power saving	0: ON
		5	ADF pickup motor clock interrupt input	alternates 0/1
		6	ADF read motor clock interrupt input	alternates 0/1
		7	not used	
P023	STACKER	0	lamp ON signal	1: ON
		1	CIS drive ON signal	1: ON
		2-7	for R&D	
P024	SADDLE	0-7	not used	
P025	SADDLE	0-7	not used	
P026	SADDLE	0-7	not used	
P027	SADDLE	0-7	not used	
P028	SADDLE	0-7	not used	
P029	SADDLE	0-7	not used	
P030	SADDLE	0-7	not used	

T-15-27

Address	Controller	Bit	Description	Remarks
P031	SADDLE	0	saddle tray paper sensor	0: ON

Address	Controller	Bit	Description	Remarks
		1	paper positioning area paper sensor	0: ON
		2	crescent roller HP sensor	0: ON
		3	saddle delivery path sensor	0: ON
		4	saddle path (upstream) sensor	1: ON
		5	saddle path (middle) sensor	1: ON
		6	saddle path (downstream) sensor	1: ON
		7	saddle path sensor	1: ON
P032	SADDLE	0	butting motor enable signal	1: ON
		1	butting motor CW signal	1: ON
		2	butting motor CCW signal	1: ON
		3	folding roller HP sensor	1: ON
		4	front door open sensor	0: ON
		5	delivery cover open detection (photo sensor)	0: ON
		6	saddle alignment HP sensor	0: ON
		7	delivery cover open 24V down detection	1: ON
P033	SADDLE	0	inlet flapper solenoid	1: ON
		1	saddle path switch flapper 1	1: ON
		2	saddle path switch flapper 2	1: ON
		3	intermediate feed solenoid	1: ON
		4-5	not used	
		6	inlet path sensor	1: ON
		7	not used	
P034	SADDLE	0	rear staple motor CW	0: ON
		1	rear staple motor CCW	0: ON
		2	front stapler motor CW	0: ON
		3	not used	
		4	folding roller HP connector open detection	0: ON
		5-7	not used	
P035	SADDLE	0	DIPSW_1	0: ON

Address	Controller	Bit	Description	Remarks
		1	DIPSW_2	0: ON
		2	DIPSW_3	0: ON
		3	DIPSW_4	0: ON
		4	DIPSW_5	0: ON
		5	DIPSW_6	0: ON
		6	DIPSW_7	0: ON
		7	DIPSW_8	0: ON
P036	SADDLE	0-1	not used	
		2	punch switch 1	0: ON
		3	5V detection signal	0: ON
		4	24V detection signal	0: ON
		5-7	not used	
P037	SADDLE	0	POWER_ON	1: ON
		1	LED1	1: ON
		2	LED2	1: ON
		3	LED3	1: ON
		4	LEDY	0: ON
		5	TRAY_MTR_CUR	0: ON
		6	TRAY_MTR_B	0: ON
		7	TRAY_MTR_A	0: ON
P038	PUNCHER	0	DIPSW1	0: ON
		1	DIPSW2	0: ON
		2	DIPSW3	0: ON
		3	not used	
		4	PCH-OUT	
		5	rear edge sensor	1: ON
		6	punch encoder clock	
		7	punch HP sensor	0: ON
P039	PUNCHER	0-2	for R&D	

Address	Controller	Bit	Description	Remarks
		3-7	not used	
P040	PUNCHER	0-3	for R&D	
		4	horizontal registration HP sensor	1: ON
		5	horizontal registration motor STB	0: ON
		6	punch motor CCW	0: ON
		7	punch motor CW	0: ON
P041	PUNCHER	0-3	not used	
		4	DIPSW4	0: ON
		5	horizontal registration motor CUR	0: ON
		6	for R&D	
		7	not used	
P042	PUNCHER	0	LED1	0: ON
		1	for R&D	
		2	for R&D	
		3	LED2	0: ON
		4	front cover sensor	0: ON
		5	for R&D	
		6	PUSHSW2	0: ON
		7	PUSHSW1	0: ON
P043	PUNCHER	0-4	not used	
		5	upper cover sensor	0: ON
		6-7	not used	

15.3.6 <MN-CON>

T-15-28

Address	Bit	Sign	Description	Remarks
P001 (output)	0	GPDATA	PWR1	1: normal
	1		PWR2	1: normal
	2		for R&D	every 50 msec, alternates 1/0
	3		for R&D	
	4		cooling fan ON	cooling fan control

T-15-29

P002	0 to 16		for R&D	

T-15-30

P003 (output)	10	GPO	pickup count (for coin robo, ASSIST)	
	11		delivery count (for coin robo, ASSIST)	
	12		LCD backlight control	0: off, 1: on

T-15-31

P004 (input)	0	GPI	SRAM board detected	0: present, 1: absent

	1	for R&D	
	2	for R&D	
	3	operation enabled (key switch)	0: enabled, 1: disabled
	4	operation enabled (control card)	0: enabled, 1: disabled
	5	operation enabled (coin robo)	0: enabled, 1: disabled

T-15-32

P005	0 to 7	for R&D	

T-15-33

P006 (input)	8	open I/F control (PRDY signal)	0: Ready, 1: not ready
	9	open I/F setting	Mode0
	10	open I/F setting	Mode1
	11-13	for R&D	
	14	open I/F board detection	0: present; 1: absent
	15	open I/F detection (CRDY)	0: Ready, 1: not ready

T-15-34

P007 (input)	16	fax option	0: connected; 1: not connected

T-15-35

P008 (input)	4	Printer Power Ready	0: Ready, 1: not ready
	5-8	for R&D	
	9	Scanner Power Ready	0: Ready, 1: not ready

T-15-36

P009 (output)	5	PCPRDY	0: Ready, 1: not ready
	6-10	for R&D	
	11	Controller Power Ready	0: Ready, 1: not ready

15.4 ADJUST（Adjustment Mode）

15.4.1 COPIER

15.4.1.1 ADJ-XY

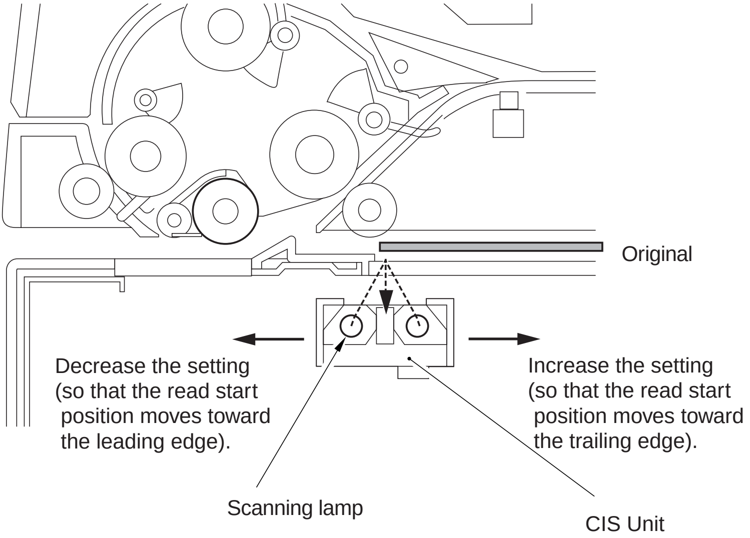
15.4.1.1.1 Overview

Adjusting the Image Read Start Point

15.4.1.1.2 <ADJ-X>

T-15-37

	Use it to adjust the scanner image leading edge position (i.e., image read start position in sub scanning direction).
Method of adjustment	- if the non-image width is larger than indicated, decrease the setting. - if an area outside the original is copied, increase the setting. - an increase of '1' will move the image read start position toward the trailing edge by 0.1 mm (i.e., the image read range will move toward the trailing edge). - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the setting indicated on the service label.
Range of adjustment	**1 to 100** **[at time of shipment: factory adjustment value/after RAM initialization: 20]**
Caution 1	If you have changed the setting, be sure to record the new setting on the service label.


Original
Decrease the setting
(so that the read start
position moves toward
the leading edge).
Increase the setting
(so that the read start
position moves toward
the trailing edge).
Scanning lamp
CIS Unit

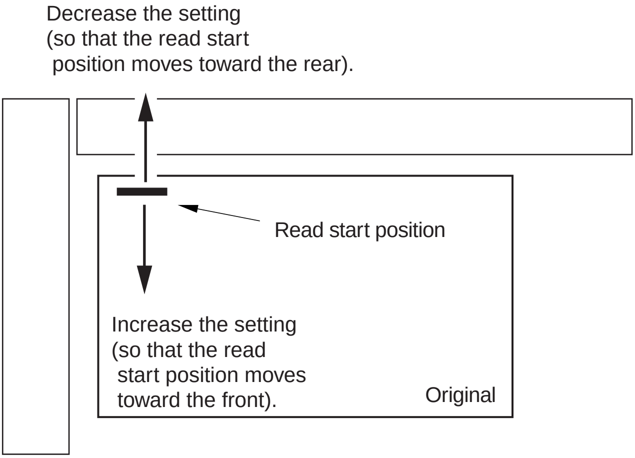
F-15-16

15.4.1.1.3 <ADJ-Y>

T-15-38

	Use it to adjust the read start cell position of the CCD (i.e., image read start position in main scanning direction).
Method of adjustment	- if the non-image width is larger than indicated, decrease the setting. - if an area outside the original is copied, increase the setting. - an increase of '1' will move the image read start position toward the front (i.e., the image read area will move toward the front). - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label.
Range of adjustment	85 to 169 [at time of shipment: factory value/after RAM initialization: 131]

Caution If you have changed the setting, be sure to record the new setting on the service label.


Decrease the setting
(so that the read start
position moves toward the rear).
Read start position
Increase the setting
(so that the read
start position moves
toward the front).
Original

F-15-17

15.4.1.1.4 <ADJ-S>

T-15-39

	Use it to enter an adjustment value for the scanner shading measurement position. - a decrease of '1' will move the shading measurement position toward the leading edge by 0.1 mm.
Method of adjustment	- if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label.
Range of adjustment	20 to 200 [at time of shipment: factory value/after RAM initialization: 40]

15.4.1.1.5 <ADJ-Y-DF>

T-15-40

	Use it to adjust the main scanning position for stream reading. - an increase of '1' will move the image read start position toward the front by 0.1 mm.
Method of adjustment	- if you have initialized the RAM on the reader controller PCB or if you have placed the reader controller PCB, enter the value indicated on the service label.
Range of adjustment	50 to 250 [at time of shipment: factory value/after RAM initialization: 158]

15.4.1.1.6 <STRD-POS>

T-15-41

	Use it to adjust the CCD read position for stream reading.
	- an increase of '1' will move the image read position to the left by 1 mm.
Method of adjustment	- if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label.
Range of adjustment	1 to 200 [at time of shipment: factory value/after RAM initialization: 100]

15.4.1.2 CCD

15.4.1.2.1 Overview

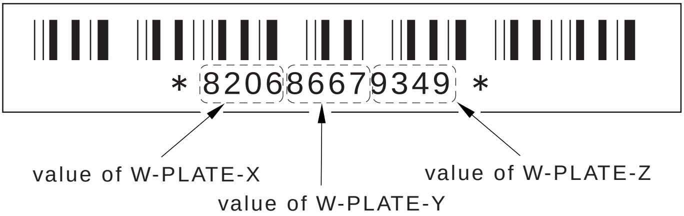
Making CCD-Related Adjustments

15.4.1.2.2 <W-PLT-X/Y/Z>

T-15-42

	Use it to enter the white level data indicated on the standard while plate.
Method of adjustment	- if you have initialized the RAM on the reader controller or if you have replaced the reader controller PCB, enter the value indicated on the service label. - if you have replaced the copyboard glass, enter the value indicated on the copyboard glass. (See the figure below.)

Range of adjustment	**1 to 9999** **[at time of shipment: factory measurement/after RAM initialization:** **W-PLT-X=8244** **W-PLT-Y=8707** **W-PLT-Z=9383]**



F-15-18

15.4.1.2.3 <CCDU-RG>

T-15-43

	Use it to enter the offset value for color displacement caused by the CIS.
Method of adjustment	Enter the offset value for the following: - if you have replaced the CIS unit, enter the value indicated on the label attached to the CIS unit. (In addition, be sure to record the value on the service label.) In the case of the following, enter the value indicated on the service label: - if you have replaced the reader controller PCB. - if you have initialized the RAM on the reader controller PCB.
Range of adjustment	-150 to 150 [at time of shipment: factory measurement/after RAM initialization: 0]

15.4.1.2.4 <MTF-MG>

T-15-44

	Use it to enter the MTF correction value in main scanning direction.
Method of adjustment	Enter the value of the following: If you have replaced the CIS unit, enter the value indicated on the label attached to the CIS unit. (In addition, be sure to record the value on the service label.) In the case of the following, enter the value indicated on the service label: - if you have replaced the reader controller PCB. - if you have initialized the RAM on the reader controller PCB.
Range of adjustment	0 to 99 [at time of shipment: factory measurement/after RAM initialization: 0]

15.4.1.2.5 <MTF-SG>

T-15-45

	Use it to enter the MTF correction value in sub scanning direction.
Method of adjustment	Enter the value for the following: If you have replaced the CIS unit, enter the value indicated on the label attached to the CIS unit. (In addition, be sure to record the value on the service label.) In the case of the following, enter the value indicated on the service label: - if you have replaced the reader controller PCB. - if you have initialized the RAM on the reader controller PCB.
Range of adjustment	0 to 99 [at time of shipment: factory measurement/after RAM initialization: 0]

15.4.1.2.6 <BOOK-RG>

T-15-46

	Use it to enter the offset value for color displacement caused by the copyboard glass.
Method of adjustment	Enter the value for the following: If you have replaced the copyboard glass, enter the value indicated on the label attached to the copyboard glass. (In addition, be sure to record the value on the service label.) In the case of the following, enter the value indicated on the service label: - if you have replaced the reader controller PCB. - if you have initialized the RAM on the reader controller PCB.
Range of adjustment	-150 to 150 [at time of shipment: factory measurement/after RAM initialization: 0]

15.4.1.2.7 <DF-RG>

T-15-47

	Enter the offset value for color displacement caused by the stream reading glass.
Method of adjustment	Enter the value for the following: Use it to enter the offset value for color displacement caused by the stream reading glass. If you have replaced the stream reading glass, enter the value indicated on the label attached to the stream reading glass. In the case of the following, enter the value indicated on the label attached to the stream reading glass: - if you have replaced the reader controller PCB. - if you have initialized the RAM on the reader controller PCB.

	Enter the offset value for color displacement caused by the stream reading glass.
Range of adjustment	-150 to 150 [at time of shipment: factory measurement/after RAM initialization: 0

15.4.1.2.8 <50-RG>

Use it to indicate the offset value (indication only) for color displacement (R-G) for BOOK mode/50% reading.

15.4.1.2.9 <50-GB>

Use it to indicate the offset value (indication only) for color displacement (G-B) for BOOK mode/50% reading.

15.4.1.2.10 <100-RG>

Use it to indicate the offset value (indication only) for color displacement (R-G) for BOOK mode/100% reading.

15.4.1.2.11 <100-GB>

Use it to indicate the offset value (indication only) for color displacement (G-B) for BOOK mode/100% reading.

15.4.1.2.12 <50DF-RG>

Use it to indicate the offset value (indication only) for color displacement (R-G) for ADF mode/50% reading.

15.4.1.2.13 <50DF-GB>

Use it to indicate the offset value (indication only) for color displacement (G-B) for ADF mode/50% reading.

15.4.1.2.14 <100DF-RG>

Use it to indicate the offset value (indication only) for color displacement (R-G) for ADF mode/100% reading.

15.4.1.2.15 <100DF-GB>

Use it to indicate the offset value (indication only) for color displacement (G-B) for ADF mode/100% reading.

15.4.1.2.16 <DFTAR-R>

T-15-48

	Use it to enter the shading target (red) for the DF (normal original read position).
Method of adjustment	Use this mode item to enter the factory measurement if an image fault occurs (e.g., caused by soiling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL1/DF-WLV2.
Range of adjustment	1 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1106]

15.4.1.2.17 <DFTAR-G>

T-15-49

	Use it to enter the shading target (green) for the DF (normal original read position).
Method of adjustment	Use this mode item to enter the factory measurement if an image fault occurs (e.g., caused by soiling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL1/DF-WLV2.
Range of adjustment	0 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1131]

15.4.1.2.18 <DFTAR-B>

T-15-50

	Use it to enter the shading target (blue) for the DF (normal original read position).
Method of adjustment	Use this mode to enter the factory setting if an image fault occurs (e.g., caused by soling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL1/DF-WLV2.
Range of adjustment	1 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1185]

15.4.1.2.19 <DFTAR2-R>

T-15-51

	Use it to enter the shading target (red) for the DF (No. 2 read position).
Method of adjustment	Use this mode item to enter the factory measurement if an image fault occurs (e.g., caused by soiling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL2.
Range of adjustment	1 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1138]

15.4.1.2.20 <DFTAR2-G>

T-15-52

	Use it to enter the shading target value (green) for the DF No. 2 read position).
Method of adjustment	Use this mode item to enter the factory measurement if an image fault occurs (e.g., caused by soiling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL2.
Range of adjustment	1 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1154]

15.4.1.2.21 <DFTAR2-B>

T-15-53

	Use it to enter the shading target (blue) for the DF (No. 2 read position).
Method of adjustment	Use this mode item to enter the factory measurement if an image fault occurs (e.g. caused by soiling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL2.
Range of adjustment	1 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1201]

15.4.1.3 LASER

15.4.1.3.1 Overview

Making Laser-Related Adjustments

15.4.1.3.2 <PVE-OFST>

T-15-54

	Use it to enter the adjustment value for the point of laser illumination.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-25 to 25** **[at time of shipment: factory measurement/after RAM initialization]**
Reference	This item is for use at the factory only. Do not use it in the field.

15.4.1.3.3 <LA-DELAY>

T-15-55

	Use it to adjust the point of laser B illumination.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller, if you have replaced the DC controller PCB, or if you have replaced the laser scanner unit.
Range of adjustment	**0 to 511** **[at time of shipment: factory measurement/after RAM initialization: 287]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.4 IMG-REG

15.4.1.4.1 Overview

Adjusting the Image Position

15.4.1.4.2 <REG-V-Y>

T-15-56

	Use it to make rough adjustments of the write start position in sub scanning direction for yellow.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to 10** **[at time of shipment: factory measurement/after RAM initialization: 0]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.4.3 <REG-V-K>

T-15-57

	Use it to make rough adjustments of the write start position in sub scanning direction for black.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to 10** **[at time of shipment: factory measurement/after RAM initialization: 0]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.4.4 <REG2-V-Y>

T-15-58

	Use it to make rough adjustments for the write start position in sub scanning direction for yellow (for 2nd side image in 2-pane placement).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to 10** **[at time of shipment: factory measurement/after RAM initialization: 0]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.4.5 <REG2-V-K>

T-15-59

	Use it to make rough adjustments for the write start position in sub scanning direction for black (for 2nd-side image in 2-pane placement).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to 10** **[at time of shipment; factory measurement/after RAM initialization: 0]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.4.6 <REG-V-M>

T-15-60

	Use it to make rough adjustments for the write start position in sub scanning direction for magenta.
Method of adjustment	- Enter the value indicated in the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to 10** **[at time of shipment: factory measurement/after RAM initialization: 0]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.4.7 <REG2-V-M>

T-15-61

	Use it to make rough adjustments for the write start position in sub scanning direction for magenta (2nd-side image in 2-pane placement).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to 10** **[at time of shipment: factory measurement/after RAM initialization: 0]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.5 DENS

15.4.1.5.1 Overview

Making Developer Density-Related Adjustments

15.4.1.5.2 <SGNL-Y>

T-15-62

	Use it to enter the toner density signal initial value (yellow).
Method of adjustment	Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**0 to 1024 [at time of shipment/after RAM initialization: 0]**

15.4.1.5.3 <SGNL-M>

T-15-63

	Use it to enter the toner density signal initial value (magenta).
Method of adjustment	Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**0 to 1024 [at time of shipment/after RAM initialization: 0]**

15.4.1.5.4 <SGNL-C>

T-15-64

	Use it to enter the toner density signal initial value (cyan).
Method of adjustment	Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**0 to 1024 [at time of shipment/ after RAM initialization: 0]**

15.4.1.5.5 <SGNL-D>

iR C3100

not used

15.4.1.5.6 <REF-Y>

iR C3100

T-15-65

	Use it to enter the toner density signal reference value (yellow).
Method of adjustment	Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**0 to 1024 [at time of shipment/after RAM initialization: 0]**

15.4.1.5.7 <REF-M>

T-15-66

	Use it to enter the toner density signal reference value (magenta).
Method of adjustment	Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**0 to 1024 [at time of shipment/after RAM initialization: 0]**

15.4.1.5.8 <REF-C>

T-15-67

	Use it to enter the toner density signal reference value (cyan).
Method of adjustment	Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**0 to 1024 [at time of shipment/after RAM initialization: 0]**

15.4.1.5.9 <REF-D>

not used

15.4.1.6 BLANK

15.4.1.6.1 Overview

Adjusting the Non-Image Width

15.4.1.6.2 <BLANK-T>

T-15-68

	Use it to enter the adjustment value for the non-image width (leading edge).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the main controller PCB or if you have replaced the SRAM PCB.
Range of adjustment	**0 to 1000** **[at time of shipment: factory measurement/after RAM initialization: +59]**

15.4.1.6.3 <BLANK-L>

T-15-69

	Use it to enter the adjustment value for the non-image width (left edge).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the main controller PCB or if you have replaced the SRAM PCB.
Range of adjustment	**0 to 1000** **[at time of shipment: factory measurement /after RAM initialization: +59]**

15.4.1.6.4 <BLANK-R>

T-15-70

	Enter the adjustment value for the non-image width (right edge).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the main controller PCB or if you have replaced the SRAM PCB.
Range of adjustment	**0 to 1000** **[at time of shipment: factory measurement/after RAM initialization: +59]**

15.4.1.6.5 <BLANK-B>

T-15-71

	Use it to enter the adjustment value of the non-image width (trailing edge).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the main controller PCB or if you have replaced the SRAM PCB.
Range of adjustment	**0 to 1000** **[at time of shipment: factory measurement/after RAM initialization: +94]**

15.4.1.7 PASCAL

15.4.1.7.1 Overview

Adjusting Auto Gradation Correction

15.4.1.7.2 <OFST-P-Y>

T-15-72

	Use it to apply an offset value on the text print read signal (yellow) for PASCAL control executed at time of auto gradation correction (full correction).
Method of adjustment	- A higher value darkens the image after auto gradation correction (full correction).
Range of adjustment	**-128 to +128** **[at time of shipment/after RAM initialization: 0]**

15.4.1.7.3 <OFST-P-M>

T-15-73

	Use it to apply an offset value on the text print read signal (magenta) for PASCAL control executed at time of auto gradation correction (full correction).
Method of adjustment	- A higher value darkens the image after auto gradation correction (full correction).
Range of adjustment	**-128 to +128** **[at time of shipment/after RAM initialization: 0]**

15.4.1.7.4 <OFST-P-C>

T-15-74

	Use it to apply an offset value on the text print read signal (cyan) for PASCAL control executed at time of auto gradation correction (full correction).
Method of adjustment	- A higher value darkens the image after auto gradation correction (full correction).
Range of adjustment	**-128 to +128** **[at time of shipment/after RAM initialization: 0]**

15.4.1.7.5 <OFST-P-K>

T-15-75

	Use it to apply an offset value on the test print read signal (black) for PASCAL control executed at time of auto gradation correction (full correction).
Method of adjustment	- A higher value darkens the image after auto gradation correction (full correction).
Range of adjustment	**-128 to +128** **[at time of shipment/after RAM initialization: 0]**

15.4.1.8 COLOR

15.4.1.8.1 Overview

Adjusting Color Balance

15.4.1.8.2 <ADJ-Y>

T-15-76

	Use it to adjust the color balance used in user mode (yellow).
Method of adjustment	- a higher value darkens the image. - a lower value lightens the image.
Range of adjustment	**-8 to +8** **[at time of shipment/after RAM initialization: 0]**

15.4.1.8.3 <ADJ-M>

T-15-77

	Use it to adjust the color balance used in user mode (magenta).
Method of adjustment	- a higher value darkens the image. - a lower value lightens the image.
Range of adjustment	**-8 to +8** **[at time of shipment/after RAM initialization: 0]**

15.4.1.8.4 <ADJ-C>

T-15-78

	Use it to adjust the color balance used in user mode (cyan).
Method of adjustment	- a higher value darkens the image. - a lower value lightens the image.
Range of adjustment	**-8 to +8** **[at time of shipment/after RAM initialization: 0]**

15.4.1.8.5 <ADJ-K>

T-15-79

	Use it to adjust the color balance of the user (black).
Method of adjustment	- a higher value darkens the image. - a lower value lightens the image.
Range of adjustment	**-8 to +8** **[at time of shipment/after RAM initialization: 0]**

15.4.1.8.6 <OFST-Y>

T-15-80

	Use it to adjust the color balance and the light area density (yellow).
Method of adjustment	A lower value decreases fogging.
Range of adjustment	**-32 to +32** **[at time of shipment/after RAM initialization: 0]**

15.4.1.8.7 <OFST-M>

T-15-81

	Use it to adjust the color balance and the light area density (magenta).
Method of adjustment	A lower value decreases fogging.
Range of adjustment	**-32 to +32** **[at time of shipment/after RAM initialization: 0]**

15.4.1.8.8 <OFST-C>

T-15-82

	Use it to adjust the color balance and the light area density (cyan).
Method of adjustment	A lower value decreases fogging.
Range of adjustment	**-32 to +32** **[at time of shipment/after RAM initialization: 0]**

15.4.1.8.9 <OFST-K>

T-15-83

	Use it to adjust the color balance and the light area density (black).
Method of adjustment	A lower value decreases fogging.
Range of adjustment	**-32 to +32** **[at time of shipment/after RAM initialization: 0]**

15.4.1.9 HV-PRI

15.4.1.9.1 Overview

Making Adjustments for the Primary Charging Assembly High-Voltage Output According to Conditions

15.4.1.9.2 <OFST1-AC>

T-15-84

	Use it to adjust the offset value of the primary charging AC voltage.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - Enter the value indicated on the label attached to the PCB if you have replaced the high-voltage PCB.

Range of adjustment	**0 to 255** **[at time of shipment/after RAM initialization: 8]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.9.3 <PRI-GAIN>

T-15-85

	Use it to adjust the gain for the primary charging current measurement.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - Enter the value indicated on the label attached to the PCB if you have replaced the high-voltage PCB.
Range of adjustment	**50 to 700** **[at time of shipment: factory adjustment value/after RAM initialization: 162]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.9.4 <PRI-OFST>

T-15-86

	Use it to adjust the offset value for the primary charging current measurement.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - Enter the value indicated on the label attached to the PCB if you have replaced the high-voltage PCB.
Range of adjustment	**-10000 to +5000** **[at time of shipment: factory adjustment/after RAM initialization: -17]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.9.5 <DR-I-INT>

T-15-87

	Use it for the drum film thickness current initial value. The drum film thickness current value measured when the following is executed will be indicated: COPIER>FUNCTION>CLEAR>DRUM-LIFE.
Method of adjustment	- If you have newly mounted/replaced the drum unit, execute the following, and record on the service label the value indicated: COPIER>FUNCTION>CLEAR>DRM-LIFE. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.

Range of adjustment	**300 to 600 (unit: 0.1yA)** **[at time of shipment: factory measurement/after RAM initialization: 350]**

15.4.1.10 HV-TR

15.4.1.10.1 Overview

Adjusting the Transfer Charging Assembly High-Voltage Output According to Conditions

15.4.1.10.2 <2TR-GAIN>

T-15-88

	Use it to adjust the gain for the secondary transfer current measurement.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - Enter the value indicated on the label attached to the PCB if you have replaced the high-voltage PCB.
Range of adjustment	**-400 to +30** **[at time of shipment: factory adjustment value/after RAM initialization: -108]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.10.3 <2TR-OFST>

T-15-89

	Use it to adjust the offset value for the secondary transfer current measurement.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - Enter the value indicated on the label attached to the PCB or if you have replaced the high-voltage PCB.
Range of adjustment	**3000 to 30000** **[at time of shipment: factory adjustment value/after RAM initialization: 10045]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.10.4 <1TR-GAIN>

T-15-90

	Use it to adjust the gain for the primary transfer current measurement.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - Enter the value indicated on the label attached to the PCB if y have replaced the high-voltage PCB.
Range of adjustment	**-70 to 0** **[at time of shipment: factory adjustment value/after RAM initialization: -32]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.10.5 <1TR-OFST>

T-15-91

	Use it to adjust the offset value of the primary transfer current measurement.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - Enter the value indicated on the label attached on the PCB if you have replaced the high-voltage PCB.
Range of adjustment	**-7000 to +7000** **[at time of shipment: factory adjustment value/after RAM initialization: 2991]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.11 FEED-ADJ

15.4.1.11.1 Overview

Making Feeding System-Related Adjustments

15.4.1.11.2 <REGIST>

T-15-92

	Use it to adjust the timing at which the registration roller clutch goes on.
Method of adjustment	- An increase of '1' will move the image toward the leading edge of paper by 0.1 mm. - Enter the value indicated on the service lable if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-50 to 50 (unit: 0.1 mm)** **[at time of shipment: factory adjustment value/after RAM initialization: -30]**

15.4.1.11.3 <ADJ-C1>

T-15-93

	Use it to adjust the image write start position in main scanning direction when the cassette 1 is used as the source of paper.
Method of adjustment	- An increase by '1' will move the image toward the rear by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if have replaced the DC controller PCB.
Range of adjustment	**-100 to 100 (unit: 0.1 mm)** **[at time of shipment: factory adjustment value/after RAM initialization: 0]**

15.4.1.11.4 <ADJ-C2>

T-15-94

	Use it to adjust the image write start position in main scanning direction when the cassette 2 is used as the source of paper.
Method of adjustment	- An incase by '1' will move the image toward the rear by 0.1 mm.
	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller or if you have replaced the DC controller PCB.
Range of adjustment	**-100 to 100 (unit: 0.1 mm)** **[at time of shipment: factory adjustment value/after RAM initialization: 0]**

15.4.1.11.5 <ADJ-C3>

T-15-95

	Use it to adjust the image write position in main scanning direction when the cassette 3 is used as the source of paper.
Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm.
	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller.
Range of adjustment	**-100 to 100 (unit: 0.1 mm)** **[at time of shipment; factory adjustment value/after RAM initialization: 0]**

15.4.1.11.6 <ADJ-C4>

T-15-96

	Use it to adjust the image write start position in main scanning direction when the cassette 4 is used as the source of paper.
Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm.
	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-100 to 100 (unit: 0.1 mm)** **[at time of shipment; factory adjustment value/ after RAM initialization: 0]**

15.4.1.11.7 <ADJ-MF>

T-15-97

	Use it to adjust the image write start position in main scanning direction when the multifeeder is used as the source of paper.
Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm.
	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-100 to 100 (unit: 0.1 mm)** **[at time of shipment: factory adjustment value/after initialization: 0]**

15.4.1.11.8 <ADJ-DK>

T-15-98

	Use it to adjust the image write start position in main scanning direction when the paper deck is used as the source of paper.
Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if have replaced the DC controller PCB.
Range of adjustment	**-100 to 100 (unit: 0.1 mm) [at time of shipment: factory adjustment value/after RAM initialization: 0]**

15.4.1.11.9 <RG-REFE>

T-15-99

	Use it to adjust the leading edge registration for the 2nd side of a double-sided print.
Method of adjustment	**- An increase of '1' will move the image toward the leading edge of paper by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller or if you have replaced the DC controller PCB.**
Range of adjustment	**-50 to +50 (1 = 0.1 mm, approx.) [at time of shipment: factory adjustment value/after RAM initialization: 0]**

	Use it to adjust the leading edge registration for the 2nd side of a double-sided print.
Method of adjustment	**- An increase of '1' will move the image toward the leading edge of paper by 0.1 mm.** **- Enter the value indicated on the service label if you have initialized the RAM on the DC controller or if you have replaced the DC controller PCB.**
Reference	The paper path used for duplexing is different from the path for the cassette (joins the later immediately in front of the registration roller); as such, the leading edge registration may also be different from the registration for paper arriving from the cassette. This mode is offered for that reason, and it does not operate in keeping with the registration used when the cassette is the source of paper.

15.4.1.11.10 <ADJ-C1RE>

T-15-100

	Use it to adjust the image write start position for the 2nd side in main scanning direction when the cassette 1 is used as the source of paper (horizontal registration adjustment).
Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to +10 (1 = 0.1 mm, approx.)** [at time of shipment: factory adjustment value/after RAM initialization: 0]

15.4.1.11.11 <ADJ-C2RE>

T-15-101

	Use it to adjust the image start position for the 2nd side in main scanning direction when the cassette 2 is used as the source of paper (horizontal registration adjustment).
Method of adjustment	- An incase of '1' will move the image toward the rear by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to +10 (1 = 0.1 mm, approx.)**
	[at time of shipment: factory adjustment/after RAM initialization: 0]

15.4.1.11.12 <ADJ-C3RE>

T-15-102

	image write start position adjustment in main scanning direction for 2nd side of paper from cassette 3 (horizontal registration adjustment)
Method of adjustment	- an increase by '1' will move the image toward the rear by 0.1 mm. - If you have initialized the RAM of the DC controller PCB or replaced the DC controller PCB, enter the value indicated on the service label.
Range of adjustment	**-10 to +10 (1 = 0.1 mm, approx.)**
	[at time of shipment: factory adjustment/after RAM initialization: 0]

15.4.1.11.13 <ADJ-C4RE>

T-15-103

	Use it to adjust the image write start position for the 2nd side when the cassette 4 is used as the source of paper (horizontal registration adjustment)
Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to +10 (1 = 0.1 mm, approx.)**
	[at time of shipment: factory adjustment/after RAM initialization: 0]

15.4.1.11.14 <ADJ-DKRE>

T-15-104

	Use it to adjust the image write start position for the 2nd side in main scanning direction when the paper deck is used as the source of paper (horizontal registration adjustment).
Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to +10 (1 = 0.1 mm, approx.)**
	[at time of shipment: factory adjustment value/after RAM initialization: 0]

15.4.1.11.15 <ADJ-MFRE>

T-15-105

	Use it to adjust the image write start position for the 2nd side in main scanning direction when the manual feed tray is used as the source of paper (horizontal registration adjustment).
Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to +10 (1 = 0.1 mm, approx.)**
	[at time of shipment: factory adjustment value/after RAM initialization: 0]

15.4.1.11.16 <RG-HF-SP>

T-15-106

	Use it to adjust the timing at which the registration clutch goes on (process speed at 1/2, heavy paper/transparency in use).
Method of adjustment	- An increase of '1' will move the image toward the leading edge of paper by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-50 to 50 (1 = 0.1 mm, approx.)** **[at time of shipment: factory adjustment value/after RAM initialization: 0]**

15.4.1.12 CST-ADJ

15.4.1.12.1 Overview

Making Pickup System-Related Adjustments

15.4.1.12.2 <MF-A4R>

T-15-107

	Use it to enter the paper width basic value for the manual feed tray (A4R).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - If you have replaced the paper width detecting VR or if you are registering a value newly, be sure to execute the following in service mode: FUNCTION>CST.
Range of adjustment	**0 to 255** [at time of shipment: factory adjustment value/after RAM initialization: 141]

15.4.1.12.3 <MF-A6R>

T-15-108

	Use it to enter the paper width basic value for the manual feed tray (A6R).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - If you have replaced the paper width detecting VR or if you are registering a value newly, be sure to execute the following in service mode: FUNCTION>CST.
Range of adjustment	**0 to 255**
	[at time of shipment: factory adjustment value/after RAM initialization: 235]

15.4.1.12.4 <MF-A4>

T-15-109

	Enter the paper width basic value for the manual feed tray (A4).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - If you have replaced the paper width detecting VR or if you are registering the value newly, be sure to execute the following in service mode: FUNCTION>CST.
Range of adjustment	**0 to 255**
	[at time of shipment: factory adjustment value/after RAM initialization: 26]

15.4.1.13 MISC

15.4.1.13.1 Overview

Making Other Adjustments

15.4.1.13.2 <SEG-ADJ>

T-15-110

	Use it to adjust the separation level used between text and photo in text/photo/map mode.
Method of adjustment	- If you want the machine to identify an original to be a photo original, increase the setting. - If you want the machine to identify an original to be a text original, decrease the setting.
Range of adjustment	**-4 to 4 [at time of shipment/after RAM initialization: 0]**

15.4.1.13.3 <K-ADJ>

T-15-111

	Use it to adjust the black recognition level for black character processing.
Method of adjustment	- If you want the machine to identify a character as a black character, increase the setting.
Range of adjustment	**-3 to 3 [at time of shipment/after RAM initialization: 0]**

15.4.1.13.4 <ACS-ADJ>

T-15-112

Method of adjustment	Use it to adjust the color recognition level for ACS mode. - If you want the machine to identify an original to be a black-and-white original, increase the setting. - If you want the machine to identify an original as a colored original, decrease the setting.
Range of adjustment	**-3 to 3 [at time of shipment/after RAM initialization: 0]**

15.4.2 FEEDER

15.4.2.1 Overview

Making Feeder-Related Adjustments

15.4.2.2 <DOCST>

T-15-113

	Adjusting the Original Image Leading Edge
Method of adjustment	A higher setting will delay the image leading edge timing.
Range of adjustment	**-100 to 100 (unit: 0.337mm) [at time of shipment/after RAM initialization: 0]**

15.4.2.3 <LA-SPEED>

T-15-114

	Adjusting the document feeding speed at the time of stream reading from the feeder
Method of adjustment	The speed becomes faster (image is reduced) by increasing setting value.
Range of adjustment	**-30 to 30 (unit: 0.1%)** **[at time of shipment: factory adjustment value/after RAM initialization: 0]**

15.4.3 SORTER

15.4.3.1 Overview

Making Finisher-Related Adjustments

15.4.3.2 <PNCH-HLE>

reserved for future use

15.4.4 ADJUST （Adjustment Mode）Level2

15.4.4.1 COPIER

15.4.4.1.1 LASER

<DLY-DAT1>

Use it to fine-adjust the point of laser B illumination.
range of adjustment: 0 to 15 (unit: 1/16 pixel) [at time of shipment/after RAM initialization: 0]

15.4.4.1.2 DENS

<HLMT-PTY>

Use it to adjust the upper limit for the patch target density level (yellow).
range of adjustment: 0 to 2 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<HLMT-PTM>

Use it to adjust the upper limit for the patch target density correction level.
range of adjustment for M: 0 to 2 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<HLMT-PTC>

Use it to adjust the upper level for the patch target density correction level (cyan).
range of adjustment: 0 to 2 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<LLMT-PTY>

Use it to adjust the lower limit level for the patch target density correction level (yellow).

range of adjustment: 2 to 6 [at time of shipment/after RAM initialization: 2]
Avoid its use as much as possible if the operation is normal.

<LLMT-PTM>

Use it to adjust the lower limit for the patch toner density correction level (magenta).
range of adjustment: 2 to 6 [at time of shipment/after RAM initialization: 2]
Avoid its use as much as possible if the operation is normal.

<LLMT-PTC>

Use it to adjust the lower limit for the patch target density correction (cyan).
range of adjustment: 2 to 6 [at time of shipment/after RAM initialization: 2]
Avoid its use as much as possible if the operation is normal.

15.4.4.1.3 V-CONT

<VCONT-Y>

T-15-115

	Use it to adjust the target contrast potential (yellow).
Range of adjustment	-30 to +30 (unit: 10 V) [at time of shipment/after RAM initialization: 0]
	A higher setting causes the images to be darker. Avoid its use as much as possible if the operation is normal.

<VCONT-M>

T-15-116

	Use it to adjust the target contrast potential (magenta).
Range of adjustment	-30 to +30 (unit: 10 V) [at time of shipment/after RAM initialization: 0]
	A higher setting causes the images to be darker. Avoid its use as much as possible if the operation is normal.

<VCONT-C>

T-15-117

	Use it to adjust the target contrast potential (cyan).
Range of adjustment	-30 to +30 (unit: 10V) [at time of shipment/after RAM initialization: 0]
	A higher setting causes the images to be darker. Avoid its use as much a possible if the operation is normal.

<VCONT-K>

T-15-118

	Use it to adjust the target contrast potential (black).
Range of adjustment	-30 to +30 (unit: 10V) [at time of shipment/after RAM initialization: 0]
	A higher setting causes the mages to be darker. Avoid its use as much as possible if the operation is normal.

<VBACK-Y>

T-15-119

	Use it to adjust the de-fogging potential (yellow).
Range of adjustment	-30 to +30 (unit: 5V) [at time of shipment/after RAM initialization: 0]
	A higher setting decreases fogging. Avoid its use as much as possible if the operation is normal.

<VBACK-M>

T-15-120

	Use it to adjust the de-fogging potential (magenta).
Range of adjustment	-30 to +30 (unit: 5V) [at time of shipment/after RAM initialization: 0]
	A higher setting decreases fogging. Avoid its use as much a possible if the operation is normal.

<VBACK-C>

T-15-121

	Use it to adjust the de-fogging potential (cyan).
Range of adjustment	-30 to +30 (unit: 5V) [at time of shipment/after RAM initialization: 0]
	A higher setting decreases fogging. Avoid its use as much as possible if the operation is normal.

<VBACK-K>

T-15-122

	Use it to adjust the de-fogging potential (black).
Range of adjustment	-30 to +30 (unit: 5V) [at time of shipment/after RAM initialization: 0]
	A higher setting decreases fogging. Avoid its use as much as possible if the operation is normal.

<PT-VCT-Y>

T-15-123

	Use it to adjust the patch image target contrast potential (yellow).
Range of adjustment	-5 to +5 (unit: 4V) [at time of shipment/after RAM initialization: 0]

<PT-VCT-M>

T-15-124

	Use it to adjust the patch image target contrast potential (magenta).

Range of adjustment	-5 ot +5 (unit: 4V) [at time of shipment/after RAM initialization: 0]

<PT-VCT-C>

T-15-125

	Use it to adjust the patch image target contrast potential (cyan).
Range of adjustment	-5 to +5 (unit: 4V) [at time of shipment/after RAM initialization: 0]

<PT-VCT-K>

T-15-126

	Use it to adjust the patch image target contrast potential (black).
Range of adjustment	-5 to +5 (unit: 4V) [at time of shipment/after RAM initialization: 0]

15.4.4.1.4 COLOR

<LD-OFS-Y>

Use it to adjust the color balance for the low density range (yellow).
range of adjustment: -8 to +8 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<LD-OFS-M>

Use it to adjust the color balance for the low density range (magenta).
range of adjustment : -8 to + 8 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<LD-OFS-C>

Use it to adjust the color balance for the low density range (cyan).
range of adjustment: -8 to +8 [at time of shipment/after RAM initialization: 0]

Avoid its use as much as possible if the operation is normal.

<LD-OFS-K>

Use it to adjust the color balance of the low density range (black).
range of adjustment: -8 to +8 [at time of shipment/after RAM initialization: 0]
Avoid its use if the operation is normal.

<MD-OFS-Y>

Use it to adjust heat color balance for the medium density range (yellow).
range of adjustment: -8 to +8 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<MD-OFS-M>

Use it to adjust the color balance for the medium density range (magenta).
range of adjustment: -8 to +8 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<MD-OFS-C>

Use it to adjust the color balance of the medium density range (cyan).
range of adjustment: -8 to +8 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<MD-OFS-K>

Use it to adjust the color balance of the medium density range (black).
range of adjustment: -8 to +8 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<HD-OFS-Y>

Use it to adjust the color balance for the high-density range (yellow).
range of adjustment: -8 to +8 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<HD-OFS-M>

Use it to adjust the color balance for the high density range (magenta).
range of adjustment: -8 to + 8 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<HD-OFS-C>

Use it to adjust the color balance for the high density range (cyan).
range of adjustment: -8 to +8 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

<HD-OFS-K>

Use it to adjust the color balance for the high density range (black).
range of adjustment: -8 to +8 [at time of shipment/after RAM initialization: 0]
Avoid its use as much as possible if the operation is normal.

15.4.4.1.5 HV-TR

<2TR-TGT1 to 8>

T-15-127

	Use it to set the offset value for the secondary transfer target current value.
	The secondary transfer ATVC target current value will be offset if the operating mode of the machine matches the setting of TR-ENV, TR-PPR, TR-CLR, TR-DUP. 1a/
Setting	-5 to 5 (unit: uA)
Reference	The following 6 items are grouped as a single set: 2TR-TGT, 2TR-SHR, TR-PPR, TR-ENV, TR-CLR, TR-DUP.

<2TR-SHR1 to 8>

T-15-128

	Use it to set the offset value for the secondary ATVC assignment voltage.
	The paper assignment voltage will be offset for secondary ATVC if the machine operation mode matches the settings of TR-ENV, TR-PPR, TR-CLR, TR-DUP.
Setting	-5 to 5 (unit: 100V)
Reference	The following 6 items are grouped as a single set: 2TR-TGT, 2TR-SHR, TR-PPR, TR-ENV, TR-CLR, TR-DUP.

<TR-PPR1 to 8>

T-15-129

	Use it to set paper types for secondary transfer ATVC.
	1: plain paper; 2: heavy paper; 3: tracing paper; 4: transparency; 5: postcard, envelope; 6: label sheet; 7; special paper 2
Reference	The following 6 items are grouped as a single set: 2TR-TGT, 2TR-SHR, TR-PPR, TR-ENV, TR-CLR, TR-DUP.

<TR-ENV1 to 8>

T-15-130

	Use it to make environmental settings for secondary transfer ATVC.
	1: low humidity; 2: normal humidity; 3: high humidity
Reference	The following 6 items are grouped as a single set: 2TR-TGT, 2TR-SHR, TR-PPR, TR-ENV, TR-CLR, TR-DUP.

<TR-CLR1 to 8>

T-15-131

	Use it to make color mode settings for secondary transfer ATVC.
	1: Bk mode 2: C mode
Reference	The following 6 items are grouped as a single set: 2TR-TGT, 2TR-SHR, TR-PPR, TR-ENV, TR-CLR, TR-DUP.

<TR-DUP1 to 8>

T-15-132

	Use it to make simplex/duplex pickup mode settings for secondary transfer ATVC.
	1: single-sided; 2: auto double-sided; 3: manual double-sided
Reference	The following 6 items are grouped as a single set: 2TR-TGT, 2TR-SHR, TR-PPR, TR-ENV, TR-CLR, TR-DUP.

<1TR-TGY>

T-15-133

	Use it to adjust the primary transfer ATVC target current offset value (yellow).
Range of adjustment	-10 to 10 (unit: 0.5 uA)

<1TR-TGM>

T-15-134

	Use it to adjust the primary transfer ATVC target current offset value (magenta).
Range of adjustment	-10 to 10 (unit: 0.5 uA)

<1TR-TGC>

T-15-135

	Use it to adjust the primary transfer ATVC target current offset value (cyan).
Range of adjustment	-10 to 10 (unit: 0.5 uA)

<1TR-TGK1>

T-15-136

	Use it to adjust the primary transfer ATVC target current offset value (black, mono).
Range of adjustment	-10 to 10 (unit: 0.5 uA)

<1TR-TGK4>

T-15-137

Use it to adjust the primary transfer ATVC target current offset value (Bk; 4C).

Range of adjustment -10 to 10 (unit: 0.5 uA)

<TR-INTVL>

T-15-138

Use it to adjust the primary transfer bias for between colors/between sheets.

Range of adjustment -8 to +8 (unit: 10%)
[at time of shipment/after RAM initialization: 0]

Increase the setting (if the light image is limited to about 30 to 180 mm along the leading edge of a halftone solid area).

Decrease the setting (if the dark area is limited to about 30 to 180 mm along the leading edge of a halftone solid area).

When increasing the setting, be sure to do so in increments of '1'.

<2T-TP-LV>

T-15-139

Use it to adjust the offset for the secondary transfer bias applied from when the leading edge of paper reaches the secondary transfer roller to when a specific period of time passes.

Range of adjustment -50 to +50 (unit: 1%)
[at time of shipment/after RAM initialization: 0]

<2T-TP-TM>

T-15-140

	Use it to adjust the offset for the secondary transfer bias applied when the leading edge of paper reaches the secondary transfer roller.
Range of adjustment	0 to 290 (nit: msec) [at time of shipment/after RAM initialization: 0]

15.4.4.1.6 FEED-ADJ

<LOOP-CST>

T-15-141

	Use it to adjust the degree of arching when the cassette is used as the source of paper.
Range of adjustment	-100 to 100

<LOOP-MF>

T-15-142

	Use it to adjust the degree of arching when the multifeeder is used as the source of paper.
Range of adjustment	-100 to 100

<LOOPREFE>

T-15-143

	Use it to adjust the degree of arching in duplex mode.
Range of adjustment	-100 to 100

15.4.4.1.7 MISC

<ACS-EN>

T-15-144

	Use it to adjust the ACS identification area.
Range of adjustment	-2 to 2 [at time of shipmen/after RAM initialization: 1]

<ACS-CNT>

T-15-145

	Use it to set the chrome count range for ACS identification.
Range of adjustment	-2 to 2 [at time of shipmen/after RAM initialization: 0]

<ACS-EN2>

T-15-146

	Use it to adjust the ACS identification range (for DF stream reading).
Method of adjustment	A higher setting increases the range of identification.
Range of adjustment	-2 to 2 [at time of shipment/after RAM initialization: 1]

<ACS-CNT2>

T-15-147

	Use it to adjust the count range of chrome pixels for ACS identification (for DF stream reading).
Method of adjustment	A higher setting increases the range of identification.
Range of adjustment	-2 to 2 [at time of shipment/after RAM initialization: 0]

<D-MTR-SP>

T-15-148

	Use it to fine-adjust the drum/ITB motor speed (magnification adjustment).
Range of adjustment	-5 to +5 (unit: 0.1%) [at time of shipment/after RAM initialization: 0]

15.5 FUNCTION （Operation/Inspection Mode）

15.5.1 COPIER

15.5.1.1 INSTALL

15.5.1.1.1 Overview

Operation for Installation

15.5.1.1.2 <STIR-Y>

T-15-149

	Use it to stir the developer inside the developing unit (Y).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.3 <STIR-M>

T-15-150

	Use it to stir the developer inside the developing unit (M).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.4 <STIR-C>

T-15-151

	Use it to stir the developer inside the developing unit (C).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.5 <STIR-K>

T-15-152

	Use it to stir the developer inside the developing unit (Bk).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.6 <STIR-4>

T-15-153

	Use it to stir the developer inside all developing units (Y, M, C, Bk).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.7 <INIT-Y>

T-15-154

	Use it to cause the machine to read the initial value for the Y toner density signal (SGNL, REF).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.8 <INIT-M>

T-15-155

	Use it to cause the machine to read the initial value for the M toner density signal (SGNL, REF).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.9 <INIT-C>

T-15-156

	Use it to cause the machine to read the initial value for the C toner density signal (SGNL, REF).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.10 <INIT-3>

T-15-157

	Use it to cause the machine to read the initial value for 3-color (Y, M, C) toner density signal (SGNL, REF).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.11 <SPLY-H-Y>

T-15-158

	Use it to start initial supply of toner from the toner cartridge (Y) to the toner buffer assembly.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.12 <SPLY-H-M>

T-15-159

	Use it to start initial supply of toner from the toner cartridge (M) to the toner buffer assembly.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.13 <SPLY-H-C>

T-15-160

	Use it to start initial supply of toner from the toner cartridge (C) to the toner buffer assembly.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.14 <SPLY-H-K>

T-15-161

	Use it to start initial supply of toner from the toner cartridge (Bk) to the toner buffer assembly.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.15 <SPLY-H-4>

T-15-162

	Use it to start initial supply of toner from all toner cartridges (Y, M, C, Bk) to the toner buffer assembly.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.16 <STRD-POS>

T-15-163

	Use it to cause auto detection of the CIS read position for DF stream reading mode.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.17 <CARD>

T-15-164

	Use it to set up a card reader.
	1 to 200 (at time of shipment/upon RAM initialization: 0)
Method of operation	Enter a number for the cards, and press the OK key. (As many as 100 cards each given a number starting with the one you entered will be enabled for use.) At this time, the card control information (group ID and ID No.) is initialized.

15.5.1.1.18 <KEY>

T-15-165

	Use it to set the control key function.
Settings	**0: do not recognize control key. [at time of shipment/after RAM initialization: 0]**
	1: recognize control key function.
Method of operation	1) Make the following selections, and enter '1': COPIER>INSTALL>KEY.
	2) Turn off and then on the main power switch (so that the control key function will be recognized).

15.5.1.2 CCD

15.5.1.2.1 Overview

CCD-Related Automatic Adjustmant

15.5.1.2.2 <DF-WLVL1/2>

T-15-166

	Use it to adjust the ADF white level.
Method of operation	1) Make the following selections, and enter the appropriate value: COPIER>ADJUST>CCD>W-PLATE-X/Y/Z. To check the target value, make the following selections: COPIER>DISPLAY>CCD>TARGET-R/G/B.

2) Execute the following selections:
COPIER>FUNCTION>CCD>DF-WLVL1.
Place paper normally used by the user on the copyboard glass, and cause the machine to read it.
The machine reads the white level for book mode (i.e., checks the degree of transmission of the glass for book mode).

3) Execute the following selections:
COPIER>FUNCTION>CCD-DF-WLVL2.
Place paper normally used by the user in the DF, and cause the machine to read it (steam reading).
The machine reads the white level for DF mode (stream reading; i.e., checks the level of transmission of the reading glass for stream reading).
face reading: computes DFTAR-R/G/B
back reading: computes DFTAR2-R/G/B

Caution	Be sure to execute these 2 items at the same time.

15.5.1.3 CST

15.5.1.3.1 Overview

Cassette/Manual Feed Tray-Related Auto Adjustment

15.5.1.3.2 <MF-A4R, MF-A6R, MF-A4>

T-15-167

	Use it to enter the paper width basic value for the manual feeder. A4 width: 210 mm; A6R width: 105 mm; A4 width: 297 mm - To make fine-adjustments, make the following selections: COPIER>ADJUST>CST-ADJ>MF-A4, RMF-A6R, MF-A4.
Method of operation	1) Place A4 paper in the manual feeder, and adjust the size guide to A4R width. 2) Using this service mode item, select 'MF-A4R' to highlight, and press the OK key(so that the value will be stored after auto adjustment). 3) Likewise, perform steps 1) and 2) to register the basic value for A6R and A4.

15.5.1.4 CLEANING

15.5.1.4.1 Overview

Cleaning Operation

15.5.1.4.2 <TBLT-CLN>

T-15-168

	Use it to clean the intermediate transfer belt. When executed, it will remove the foreign matter (e.g., oils from fingers, paper lint) to prevent image faults.
Method of operation	Select it to highlight, and press the OK key to start the operation. The cleaning operation will last for about 80 sec and end automatically.

15.5.1.4.3 <FDRL-CLN>

T-15-169

	Use it to clean the face-down delivery roller 1/2.
Method of operation	1) Select it to highlight, and press the OK key so that the rollers will start to rotate. 2) While both rollers are rotating, press a cloth moistened with alcohol against the individual rollers to clean them. 3) Press the Stop key to stop the operation.

15.5.1.4.4 <RVRL-CLN>

T-15-170

	Use it to clean the reversing roller.
Method of operation	1) Open the delivery cover. 2) Select the item, and press the OK key so that the roller will start to rotate.

3) While the roller is rotating, press a cloth moistened with alcohol against it to clean.

4) Press the Stop key to stop the operation.

15.5.1.4.5 <DEVL-CLN>

T-15-171

	Use it to clean the inside of the developing unit. The machine is forced to use up the toner that may have been excessively stirred by the toner stirring screw (i.e., thus acquiring wrong charges) to prevent image faults.
Method of operation	Select the item to highlight, and press the OK key to start the operation. The operation will last for about 7 min and will end automatically.

15.5.1.4.6 <TB-INSD>

T-15-172

	Use it to clean the inner side of the intermediate transfer belt (ITB).
Method of operation	Select it to highlight, and press the OK key to start the operation. The operation will last for about 30 sec and will end automatically.

15.5.1.5 FIXING

15.5.1.5.1 Overview

Fixing Unit-Related Auto Adjustments

15.5.1.5.2 <NIP-CHK>

Generate a printout of automatic measurement of the fixing nip width.

Method of operation

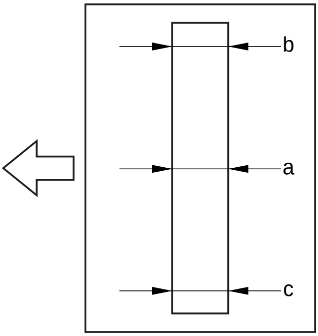
1) Select 'plain paper' or 'recycled paper' as the type of paper for the cassette 1 (Additional Function> common settings >paper type).

2) Place A4/LTR plain paper or recycled paper in the cassette 1.

3) Press the OK key (so that paper is picked up from the cassette 1).

4) See that the paper is stopped once between the fixing roller and then discharged in about 15 sec.

5) Check to see the nip width of the discharged paper is as indicated.



F-15-19

standard: b, c

9.25 -0.25, +0.25 mm (less than 5000 sheets)

9.25 +1.25/ -0.25mm difference between b and c 0.5 mm or less (5000 sheets or more)

standard: a (reference only)
from 8.5 to 9.0 mm (less than 5000 sheets)
from 8.5 to 10.0 mm (5000 sheets or more)

Note 1:
The point of measurement for a is in the middle of paper.

Note 2:
The points of measurement for b and c are 10 to 15 mm from the edge of paper.

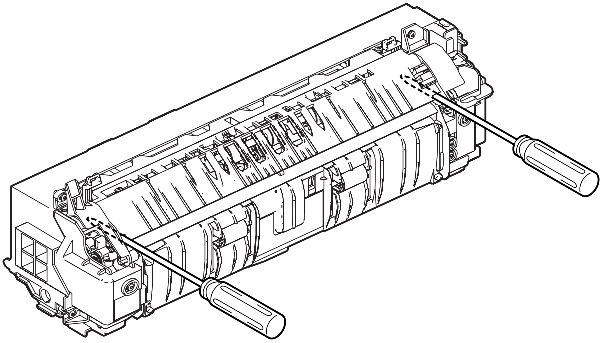
Note 3:
The arrow in the figure indicates the direction of paper movement.

Note 4:
The nip tends to increase as more and more paper is moved past. There is no need, however, for another session of adjustment each time 5000 sheets have been moved past. If adjustments are needed for some reason, try so that b and c are adjusted to match the median value of 9.25 mm.

6) If the nip width is not as indicated, perform the following:
6-1) Turn the front and rear adjusting screws to adjust the nip.

EX: if the median value of the nip measurements is closer to the lower limit,
tighten the screw of the side where the nip at the ends is smaller; a full turn of the screw will cause a change of about 0.5 mm.

EX: if the nip balance is correct, turn the screws of both sides.



F-15-20

7) After the work, generate a test print using the following: COPIER> TEST> PG> TYPE6 (grid).

15.5.1.6 PANEL

15.5.1.6.1 Overview

Checks on the Control Panel

15.5.1.6.2 <LCD-CHK>

T-15-173

	Use it to check the LCD for a missing dot.
Method of operation	1) Select the item, and press the OK key to start the operation. See that the front face of the touch panel goes on in the following sequence: white, black, red, green, and blue. 2) Press the Stop key to end the operation. (In the case of the printer model, press the Clear key.)

15.5.1.6.3 <LED-CHK>

T-15-174

	Use it to check the LEDs on the control panel.
Method of operation	1) Select it, and press the OK key to start the operation. See that the LEDs go on in sequence. 2) Press [LED-OFF] to stop the operation.

15.5.1.6.4 <LED-OFF>

T-15-175

	Use it to check the LEDs on the control panel.
Method of operation	1) Select it to end the operation under [LED-CHK].

15.5.1.6.5 <KEY-CHK>

T-15-176

	Use it to check the keys.
Method of operation	1) Select [KEY-CHK] so that the machine indicates the numbers/names of the input keys. 2) Press any key to check; if normal, the appropriate character will appear on the touch panel. (See the table.) 3) Select [KEY-CHK] once again to end the key input check.

T-15-177

Numbers/Names of the Keys

Key	**Indication on screen**
0 to 9, #, *	0 to 9, #, *
reset	RESET
stop	STOP
user mode	USER
start	START
power save	STAND BY
clear	CLEAR
ID	ID
help	?
counter check	BILL

15.5.1.6.6 <TOUCHCHK>

Adjusting the Coordinates of the Analog Touch Panel

T-15-178

Method of operation	- Match points pressed on the touch panel with the coordinates of the LCD. - Execute this service mode item if you have replaced the LCD. 1) Select [TOUCHCHK] to highlight, and press the OK key. 2) Press the + symbols (9 pc.) appearing on the touch panel in sequence to end the adjustment.

15.5.1.7 PART-CHK

15.5.1.7.1 Overview

Checking the Operation of the Loads

15.5.1.7.2 <CL>

T-15-179

	Use it to select a clutch whose operation you want to check. (range 1 through 15; 8 through 10 and 13 through 15, reserved)	
Method of operation	1) Select the item.	
	2) Enter the code of the clutch you want to check using the keypad.	
	1: toner supply clutch	CL7

2: ITB cleaning drive clutch	CL8
3: sleeve drive clutch	CL3
4: secondary transfer swing clutch	CL9
5: duplex feed clutch	CL6
6: registration clutch	CL2
7: manual feed pickup clutch	CL1
8 to 10: reserved	
11: deck pickup clutch	CL2D
12: deck draw-out clutch	CL1D

3) Press the OK key.

4) Press [CL-ON] to check the operation.

15.5.1.7.3 <CL-ON>

T-15-180

	Use it to start a check on the operation of the clutch you have selected.
Method of operation	1) Select the time, and press the OK key so that the clutch will repeat going on and off as follows: ON for 0.5 sec > OFF for 10 sec > ON for 0.5 sec > OFF for 1 sec > ON for 0.5 sec > OFF

15.5.1.7.4 <FAN>

T-15-181

	Use it to select a fan whose operation you want to check. (1 through 10; 5 or higher, reserved)
Method of operation	1) Select the item. 2) Enter the code of the fan you want to check. 1: heat exhaust fan (FAN1) 2: heat exhaust fan 2 (FM2) 3: toner suction fan (FM5) 4: ITB fan (FM3) 3) Press the OK key. 4) Press [FAN-ON], and check the operation.

15.5.1.7.5 <FAN-ON>

T-15-182

	Use it to check the operation of the fans; power supply fan, fixing fan, cleaner fan.
Method of operation	1) Select the item, and press the OK key so that the following operation starts: for 10 sec, ON at full speed > for 10 sec, ON at half speed > standby

15.5.1.7.6 <MTR>

T-15-183

Use it to select the motor whose operation you want to check.

(1 thorough 25; 9, 17 through 25, reserved)

Method of operation

1) Select the item.

2) Enter the code of the motor you want to check using the keypad.

1: laser scanner motor	M1
2: rotary motor	M8
3: pickup 1 motor	M6
4: pickup 2 motor	M7
5: No. 1 delivery motor	M4
6: drum motor	M9
7: main motor	M2
8: fixing motor	M11
9: reserved	
10: pedestal pickup 1 motor	M1C
11: pedestal pickup 2 motor	M2C
12: P/D feed motor	M1D
13: P/D lifter motor	M2D
14: No. 2 delivery motor	
15: No. 3 delivery motor	
16: buffer path motor	

3) Press the OK key.

4) Press [MTR-ON], and check the operation.

15.5.1.7.7 <MTR-ON>

T-15-184

	Use it to start the operation of the motor.
Method of operation	Toner Cartridge Motor (Y, M, C, K) 1) Remove the toner cartridge, and close the front cover. 2) Select the item, and press the OK key. - for 10 sec ON > OFF Horizontal Registration Motor 1) Select the item, and press the OK key. - HP search starts > end automatically Motors Other Than Toner Cartridge Motor (Y, M, C, K) and Horizontal Motor 1) Select the item, and press the OK key. - for 10 sec, ON > OFF

15.5.1.7.8 <SL>

T-15-185

	Use it to select the solenoid whose operation you want to check. (1 to 20; 4 to 10, 18 to 20, reserved)
Method of operation	1) Select the item. 2) Enter the code of the solenoid you want to check using the keypad. 1: cassette 1 pickup solenoid SL1 2: cassette 2 pickup solenoid SL2

3: ATR shutter solenoid	SL3
4 to 10: reserved	
11: cassette 3 pickup solenoid	SL1C
12: cassette 4 pickup solenoid	SL2C
13: paper deck pickup solenoid	SL1D
14: paper deck paper compartment open solenoid	SL2D
15: No. 1 flapper solenoid	
16: No. 2 flapper solenoid	
17: No. 3 flapper solenoid	
18 to 20: reserved	

3) Press the OK key.

4) Press [SL-ON], and check the operation.

15.5.1.7.9 <SL-ON>

T-15-186

	Use it to start the check on the solenoid you have selected.
Method of operation	1) Select the item, and press the OK key so that the solenoid will repeat going on and off as follows: for 0.5 sec, ON > for 10 sec, OFF > for 0.5 sec, ON > for 10 sec, OFF > for 0.5 sec, ON >OFF

15.5.1.8 CLEAR

15.5.1.8.1 Overview

Resetting RAM/Error Code/Jam History/Error History

15.5.1.8.2 <ERR>

T-15-187

	Use it to reset an error code. (E000, E001, E002, E003)
Method of operation	1) Select the item, and press the OK key. 2) Turn off and then on the main power supply.

15.5.1.8.3 <DC-CON>

T-15-188

	Use it to reset the RAM on the DC controller PCB.
Caution	The contents of the RAM are removed when the main power switch is turned off and then on once again.
Method of operation	1) Obtain a printout of the service mode settings by making the following selections: COPIER>FUNCTION>MISC-P>P-PRINT. 2) Select the item, and press the OK key. 3) Turn off and then on the main power. 4) As necessary, enter the data indicated on the print obtained using [P-PRINT].

15.5.1.8.4 <R-CON>

T-15-189

	Use it to initialize the RAM on the reader controller PCB.
Caution	The contents of the RAM are initialized only when the main power switch has been turned off and then on once again.
Method of operation	1) Obtain a printout of the service mode settings by making the following selections: COPIER>FUNCTION>MISC-P>P-PRINT. 2) Select the item, and press the OK key. 3) Turn off and then on the main power. 4) As necessary, enter the data indicated on the printout obtained by [P-PRINT].

15.5.1.8.5 <JAM-HIST>

T-15-190

	Use it to reset the jam history.
Caution	The jam history is removed when the OK key is pressed.
Method of operation	1) Select the item, and press the OK key.

15.5.1.8.6 <ERR-HIST>

T-15-191

	Use it to reset the error history.
Caution	The error history is removed when the OK key is pressed.
Method of operation	1) Select the item, and press the OK key.

15.5.1.8.7 <PWD-CLR>

T-15-192

	Use it to reset the password set up in user mode under [system administrator].
Caution	The password is removed when the OK key is pressed.
Method of operation	1) Select the item, and press the OK key.

15.5.1.8.8 <ADRS-BK>

T-15-193

	Use it to reset the address book data.
Caution	The address book data is removed when the main power switch is turned off and then on once again.
Method of operation	1) Select the item, and press the OK key. 2) Turn off and then on the main power.

15.5.1.8.9 <CNT-MCON>

T-15-194

	Use it to reset the service counter readings controlled by the main controller PCB (main). (For the readings that are reset, see the description under COUNTER mode.)
Caution	The counter readings are removed when the OK key is pressed.
Method of operation	1) Select the item, and press the OK key.

15.5.1.8.10 <CNT-DCON>

T-15-195

	Use the item to reset the service counter readings controlled by the DC controller PCB. - COPIER>COUNTER>DRBL-2>SORT - COPIER>COUNTER>DRBL-2>FIN-STPR - COPIER>COUNTER>DRBL-2>FIN-PDDL - COPIER>COUNTER>DRBL-2>SADDLE - COPIER>COUNTER>DRBL-2>SDL-STPL
Caution	The counter readings are removed when the OK key is pressed.
Method of operation	1) Select the item, and press the OK key.

15.5.1.8.11 <OPTION>

T-15-196

	Use it to reset the service mode (OPTION) settings to default settings (RAM initialization).
Caution	The settings are reset when the OK key is pressed.
Reference	The data removed here is data in the main controller, DC controller, and reader controller.
Method of operation	1) Obtain a printout of the service mode settings by executing the following selections: COPIER>FUNCTION>MISC-P>P-PRINT. 2) Select the item, and press the OK key.

15.5.1.8.12 <MMI>

T-15-197

	Use it to reset the following for user mode. - backup data for copier control panel (user settings) - common settings backup data (user settings) - backup data (other than fax settings; user settings)
Caution	The settings are removed when the main power switch is turned off and then on again.
Method of operation	1) Select the item, and press the OK key. 2) Turn off and then on the main power.

15.5.1.8.13 <MN-CON>

T-15-198

	Use it to reset the RAM in the main controller PCB SRAM board.
Caution	- The contents of the RAM are removed when the main power switch is turned off and then on once again. - When this item is executed, all data on the SRAM board will be initialized. In other words, the image data including the images in Boxes on the hard disk will also be lost. Be sure to obtain the consent of the user before executing this item.
Method of operation	1) Obtain a printout of the service mode settings by executing the following selections: COPIER>FUNCTION>MISC-P>P-PRINT. 2) Select the item, and press the OK key. The machine will restart automatically, and indicate a message asking you to turn off and then on the power. 3) Turn off and then on the main power.

15.5.1.8.14 <CARD>

T-15-199

	Use it to reset card ID-related data (group).
Caution	The card ID-related data is removed when the main power switch is turned off and then on.
Method of operation	1) Select the item, and press the OK key. 2) Turn off and then on the main power.

15.5.1.8.15 <DRM-LIFE>

T-15-200

	Use it to initialize the various parameters after replacing the drum unit.
Method of operation	Execute this item if you have replaced the drum unit with a new one. 1) Select the item. 2) Press the OK key to start the operation. While the operation is under way, the item will flash; and, the operation ends in about 1 min. 3) Record the setting indicated for the following on the drum counter label: COPIER>ADJUST>HV-PRI>DRM-1-INIT. 4) If the following is not '0', execute the item once again: COPIER>DISPLAY>MISC>DRUM>LIFE.
Caution	- Do not execute this unit unless you have replaced the drum unit with a new one. Otherwise, the image density will not be optimum, requiring you to replace the drum unit. - Do not open any door or turn off the power switch while the operation is under way. Otherwise, you will have to execute the item once again.

15.5.1.9 MISC-R

15.5.1.9.1 Overview

Checking the Operation of the Reader Unit

15.5.1.9.2 <SCANLAMP>

T-15-201

	Use it to check the operation of the scanning lamp.
Method of operation	1) Select the item.
	2) Press the OK key so that the scanning lamp remains on for 3 sec.

15.5.1.10 MISC-P

15.5.1.10.1 Overview

Checking the Operation of the Printer Unit

15.5.1.10.2 <P-PRINT>

T-15-202

	Use it to generate a printout of the service mode settings.
Method of operation	1) Select the item.
	2) Press the OK key to generate a printout.
Reference	It takes about 15 sec for the machine to generate a printout.

15.5.1.10.3 <USER-PRT>

T-15-203

	Use it to obtain a printout of the user mode settings.
Method of operation	1) Select the mode.
	2) Press the OK key to generate a printout.
Reference	It takes about 3 sec for the machine to generate a printout.

15.5.1.10.4 <LBL-PRNT>

T-15-204

	Use it to obtain a printout of the service label.
Method of operation	1) Place 4/LTR paper in the cassette 1.
	2) Select the item.
	3) Press the OK key to generate a printout.
Reference	It takes about 15 sec for the machine to generate a printout.

15.5.1.10.5 <DEV-DR-Y>

T-15-205

	Use it to move the developing assembly rotary to the point of replacement for the toner cartridge (Y).
Method of operation	1) Select the item. 2) Press the OK key so that the developing assembly rotary moves to the point of replacement for the toner cartridge (Y).

Caution	Be sure to move the developing assembly rotary to the point of replacement for the toner cartridge; then, turn off the control panel power switch and the main power switch in correct sequence before removing and mounting the toner cartridge. If you replace and mount a toner cartridge that has already been used while the power is on, the machine will incorrectly indicate the level of remaining toner (to be full) until the next replacement of the toner cartridge.

15.5.1.10.6 <DEV-DR-M>

T-15-206

	Use it to move the developing rotary assembly to the point of replacement for the toner cartridge (M).
Method of operation	1) Select this item. 2) Press the OK key so that the developing assembly rotary moves to the point of replacement for the toner cartridge (M).
Caution	Be sure to move the developing assembly rotary to the point of replacement for the toner cartridge, and turn off the control panel power switch and the main power switch in correct sequence before removing and mounting the toner cartridge. If you replace and mount a toner cartridge that has already been used while the power is on, the machine will incorrectly indicate the level of remaining toner (to be full) until the next replacement of the toner cartridge.

15.5.1.10.7 <DEV-DR-C>

T-15-207

	Use it to move the developing assembly rotary to the point of replacement of the toner cartridge (C).
Method of operation	1) Select the item. 2) Press the OK key so that the developing rotary moves to the point of replacement for the toner cartridge (C).
Caution	Be sure to move the developing rotary to the point of toner replacement for the toner cartridge, and turn off the control panel power switch and the main power switch in sequence before removing and mounting the toner cartridge. If you remove and mount a toner cartridge that has been used while the power is on, the machine will incorrectly indicate the level of remaining toner (to be full) until the next replacement of the toner cartridge.

15.5.1.10.8 <DEV-DR-K>

T-15-208

	Move the developing assembly rotary to the point of replacement of the toner cartridge (Bk).
Method of operation	1) Select the item. 2) Press the OK key so that the developing assembly rotary moves to the point of replacement for the toner cartridge (Bk).
Caution	Be sure to move the developing assembly rotary to the point of replacement, and turn off the control panel power switch and the main power switch before removing and mounting the toner cartridge. If you remove and mount a toner cartridge that has been used while the power is on, the machine will incorrectly indicate the level of remaining toner (to be full) until the next replacement.

15.5.1.10.9 <ITB-CLSW>

T-15-209

	Use it when replacing the ITB cleaning unit.
Method of operation	Execute this mode when you are removing the ITB cleaning unit. 1) Select the item. 2) Press the OK key to start that operation. During the operation, the item will flash, and the operation will end in about 5 sec.
Reference	The following takes place for this mode item: 1. the developing assembly rotary is moved to the point of replacement for the toner cartridge (C) so that the toner cartridge (Bk) will move under the ITB cleaning unit. 2. if a Finisher-P1 is used, the finisher delivery tray is moved to the topmost position.
Caution	Do not use this mode unless you are removing the ITB cleaning unit.

15.5.1.10.10 <DRM-CHK>

T-15-210

	Use it to set the drum film thickness correction level.
Method of operation	Execute this item if you have replaced the DC controller PCB or if you have initialized the RAM on the DC controller PCB. 1) Enter the value indicated on the drum initial value label for the following: COPIER>ADJUST>HV-PRI>DR-I-INT. 2) Select this item, and press the OK key so that the machine will automatically measure the drum film thickness current and set up a drum film thickness correction level based on the measurement it has taken and the initial value (COPIER>ADJUST>HV-PRI>DR-I-INT).

15.5.1.10.11 <1ATVC-EX>

T-15-211

	Use it to force the execution of primary ATVC.
	Execute this item when you have replaced the ITB, the ITB unit, or the primary transfer roller.
Method of operation	1) Select the item.
	2) Press the OK key so that the operation starts; the operation will end in about 1 min.

15.5.1.10.12 <ENV-PRT>

T-15-212

	Use it to generate a printout of the log of changes in machine internal humidity/fixing temperature.
Reference	The machine prints out changes that have taken place in machine internal humidity/fixing temperature (middle) obtained from the readings of the environment sensor and then on-contact thermistor.

15.5.1.11 SYSTEM

15.5.1.11.1 Overview

Checking System-Related Operation

15.5.1.11.2 <DOWNLOAD>

T-15-213

	Use it to switch over to download mode.
Method of operation	1) Select the item. 2) Press the OK key so that the machine will enter download mode and waits for a command (connection). At this time, [STAND-BY] (or [STANDBY]) will be indicated next to the Level 3 field. 3) Uses the Service Support Tool to perform downloading work. (While connected to a PC, the machine will indicate [CONNECTED].) 4) See that that the notation has changed to [HOLD] to indicate that the communication has ended. (You may turn off the power while the indication is [HOLD].)

15.5.1.11.3 <CHK-TYPE>

T-15-214

	Use it to select the number of the partition that you want to check (HD-CHECK).
Method of operation	1) Select the item. 2) Select the number of the partition you want to check using the keypad. 0: entire HDD (check and correction) 1: image storage area 2: multiple-use file storage area 3: PDL-related file storage area 4: firmware storage area - A PDL file is a file that contains user settings data, various log data, PDL spool data, and image data (i.e., control information for data). 3) Press the OK key.

15.5.1.11.4 <HD-CHECK>

T-15-215

	Use it to check and correct the partition you have selected using CHK-TYPE.
Method of operation	1) Select the item. 2) Press the OK key. 3) See the result (1: OK; 2: NG, hardware; 3: NG, software/corrected sector, switched sector).

15.5.1.11.5 <HD-CLEAR>

T-15-216

	Us it to initialize the partition you have selected using CHK-TYPE.
Caution	- if you have selected 0 or 4, the selections will be invalid. - if you have selected 1, the SRAM area and the image control data held in the multiple-purpose file storage area will also be initialized.
Method of operation	1) Select the item. 2) Press the OK key.

⚠The initialization is done when the power is turned off and then on if you execute [HD-CLEAR] after using [CHK-TYPE] to select 1: image storage area or 3: PDL-related file storage area.

The initialization takes about 5 min, during which time the progress bar moves slowly. Do not turn off the power while the progress bar is indicated.

15.5.2 FEEDER

15.5.2.1 Overview

Checking the DF on Its Own

15.5.2.2 <MTR-CHK>

T-15-217

Use it to select a motor when checking the DF motor on its own.

Select [MTR-ON] to execute the item.

0:pickup motor
1:feed motor
2:delivery reversal motor
3:locking motor

15.5.2.3 <TRY-A4>

Use it to execute automatic adjustment (A4 Width) for DF original paper width detection.

15.5.2.4 <TRY-A5R>

Use it to execute automatic adjustment (A5R width) for DF original paper width detection.

15.5.2.5 <TRY-LTR>

Use it to execute automatic adjustment (LTR width) for DF original paper width detection.

15.5.2.6 <TRY-LTRR>

Use it to execute automatic adjustment (LTR-R width) for DF original paper width detention.

15.5.2.7 <FEED-CHK>

T-15-218

Use it to check the parameters in use when checking paper movement in the DF.

Select [FEED-ON] to execute the item.

1: simplex operation
2: duplex operating
3: simplex operation w/ stamp
4: duplex operation w/ stamp

15.5.2.8 <SL-CHK>

T-15-219

Use it to select a component when checking the DF solenoid on its own.

Use [SL-ON] to execute the item.

1: lock solenoid
2: stamp solenoid

15.5.2.9 <SL-ON>

T-15-220

Use it to start the operation selected by [SL-CHK].

Press the OK key to start the operation.

15.5.2.10 <MTR-ON>

T-15-221

Use it to start the operation selected by [MTR-ON].

Press the OK key to start the operation.
Press the OK key once again to stop the operation.

15.5.2.11 <ROLL-CLN>

T-15-222

Use it to clean the roller.
Press the OK key to start the operation.
Press the OK key once again to stop the operation.

15.5.2.12 <FEED-ON>

T-15-223

Use it to start the operation selected by [FEED-ON].

Press the OK key to start the operation.
Press the OK key once again to stop the operation.

15.5.3 FUNCTION （operation/inspection mode）:Level 2

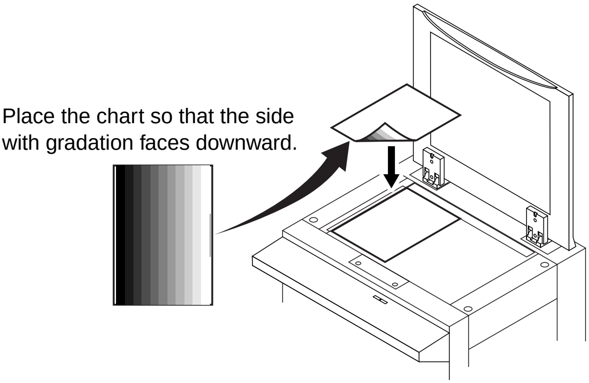
15.5.3.1 COPIER

15.5.3.1.1 CCD

<LUT-ADJ2>

CCD Gain Fine-Correction
If adjustment of the density using LUT-ADJ (CCD gain simple correction) cannot be made, execute this mode using the 10-gradation chart.
<Method of Operation>
1) Place the 10-gradation Chart (D-10 test sheet) on the copyboard glass as shown.
2) Select the item, and press the OK key.
3) See that the machine executes automatic adjustment.
4) See that the machine ends the automatic adjustment.
5) When the service mode items (COPIER>ADJUST>LAMP, COPIER>ADJUST>CCD)

are updated, print out a service sheet, and store away the printout.


Place the chart so that the side
with gradation faces downward.

F-15-21

15.5.3.1.2 LASER

<POWER-H>

Use it to turn on the laser output of the laser power maximum value adjustment.
Select the item to highlight, and press the OK key to start laser output. Press the Stop key to stop the laser output.

15.5.3.1.3 CLEAR

<SND-STUP>

Use it to initialize the setting for the transmission reading. (Execute this item when you switch language settings.)

15.5.3.1.4 MISC-P

<DRUM-ROT>

DRUM-ROT (Use it to rotate the photosensitive drum idly for a specific period of time.)
Select the item to highlight, and press the OK key to start the operation.

<KEY-HIST>

Use it to obtain a printout of the history of key inputs made on the control panel.

1) Select the item.
2) Press the OK key so that the machine generates the printout.

<HIST-PRT>

Use it to obtain a printout of the history of jams and errors.

1) Select the item.
2) Press the OK key so that the machine generates the printout.

<TRS-DATA>

Use it to move data received in memory mode to a Box.

1) Select the item.
2) Press the OK key to move the data.

15.6 OPTION （Machine Settings Mode）

15.6.1 COPIER

15.6.1.1 BODY

15.6.1.1.1 Overview

Selecting Machine-Related Settings

15.6.1.1.2 <MODEL-SZ>

T-15-224

	Use it to switch the default magnification display function and the ADF original size detection function.
Caution	The new settings become valid only when the main power switch has been turned off and then on.
Settings	0: AB (6R5E) 1: INCH (5R4E) 2: A (3R3E) 3: AB/INCH (6R5E)

15.6.1.1.3 <PASCAL>

T-15-225

	Use it to enable/disable the use of gradation data and contrast potential obtained by auto gradation correction (full correction).
Caution	The new settings become valid only when the power switch has been turned off and then on.
Settings	0: disable 1: enable [at time of shipment/after RAM initialization: 1]

15.6.1.1.4 <CONFIG>

T-15-226

	Use it to select multiple pieces of firmware stored on the hard disk, and to switch the machine's country, language, destination, and paper size configuration settings.
Caution	The new settings become valid when the main power switch has been turned off and then on.
Method of operation	1) Select the item whose setting you want to change, and press the +/- key. 2) See that each press on the +/- key changes the setting. 3) When all items are as you want, press the OK key. 4) Turn off and then on the main power switch.
Settings	XXYYZZAA XX: country (e.g., JP for Japan) YY: language (e.g., ja for Japanese) ZZ: destination (e.g., 00 for Canon) AA: paper size configuration (e.g., 00 for AB)

15.6.1.1.5 <TEMP-TBL>

T-15-227

	Use it to adjust the fixing assembly control temperature.
Setting	0: OFF 1: +5 deg C 2: -5 deg C
Caution	The new settings become valid only when the main power switch has been turned off and then on. [at time of shipment/after RAM initialization: 0]

15.6.1.1.6 <W/SCNR>

T-15-228

	Use it to specify the presence/absence of a reader unit in the case of a copier model.
Caution	The new settings become valid when the main power switch has been turned off and then on.
Setting	0: printer model 1: model w/ leader [at time of shipment: 1/after RAM initialization: 0]

15.6.1.1.7 <RUI-DSP>

T-15-229

	Use it to permit or not to permit the selection of copier functions on the RUI screen.
Setting	0: disable display of copier screen on RUI 1: enable display of copier screen on RUI [at time of shipment/after RAM initialization: 0]

15.6.1.1.8 <NW-SPEED>

T-15-230

	Use it to select a data transfer speed for connection to a network for service work.
Setting	0: Auto 1: 100Base-TX 2: 10Base-T [at time of shipment/after RAM initialization: 0]

15.6.1.1.9 <DEVL-PTH>

T-15-231

	Use it to set a threshold level of the number of prints in response to which the toner consumption sequence is forced to go on.
Method of operation	When an image with a low color ratio is copied/printed continuously, if the density is below the threshold, the toner consumption sequence is forced to go on while the job is under way as soon as the selected number of copies/prints is exceeded.

Setting	0: disable the sequence 1: 125 sheets (approx.) 2: 250 sheets (approx.) 3: 500 sheets (approx.) [at tine of shipment/after RAM initialization: 2]

15.6.1.1.10 <DFDST-L1>

T-15-232

	Use it to adjust the dust detection level (sheet-to-sheet correction) used when the DF is in use.
Method of adjustment	A higher setting enables the detection of smaller particles of dust.
Range of adjustment	0 to 255 [at time of shipment/after RAM initialization: 205]

15.6.1.1.11 <DFDST-L2>

T-15-233

	Use it to adjust the dust detection level (post-job) valid when the DF is in use.
Method of adjustment	A higher setting enables the detection of smaller particles of dust.
Range of adjustment	0 to 255 [at time of shipment/after RAM initialization: 205]

15.6.1.1.12 <DST-POS>

T-15-234

Use it to switch the original reading position when the DF is in use.

Use it to set the original read position in the presence of dust on the glass surface.

Setting	0: No. 1 position + No. 2 position 1: No. 1 position 2: No. 2 position [at time of shipment/after RAM initialization: 0]
Caution	The No. 2 position corresponds to an empty space, permitting stray dust to show in images.

15.6.1.1.13 <CCD-LUT>

T-15-235

	Use it to enable/disable the use of GAIN correction data for the CIS unit. (data corrected in FUNCTION>CCD>LUT-ADJ2 of level 2)
Setting	0: disable the use 1: enable the use (1-point correction) 2: enable the use (3-point correction) [at time of shipment/after RAM initialization: 0]

15.6.1.1.14 <2T-RL-TM>

T-15-236

	Use it to set the length of time during which the secondary transfer outside roller is moved away from the ITB.
Setting	0: 0 sec 1: 30 sec 2: 60 sec 3: 5 min 4: 30 min 5: 60 min 6: 120 min 7: off [at time of shipment/after RAM initialization: 1]
Reference	The machine moves the secondary transfer outside roller away from the ITB if its engine is not started up within a specific period of time. Use this mode to set the length of time. If white spots tend to occur in halftone images in a high humidity environment, select '0' A higher setting is better for FCOT (first copy time); however, it can lead to image faults (halftone images).

15.6.1.1.15 <ENVP-INT>

T-15-237

	Use it to set the intervals at which logs are obtained for the machine inside temperature/humidify and fixing temperature. (COPIER>FUNCTION>MISC-P>ENV-PRT and COPIER>DISPLAY>ENVRNT)
Range of Setting	0 to 480 (min) [at time of shipment/after RAM initialization: 60]
Reference	If 0, no log is obtained.

15.6.1.1.16 <FX-SPD2>

T-15-238

	fine adjustment of the fixing roller speed (for half-speed mode)
Method of adjustment	A higher setting will increase the fixing roller speed.
Range of adjustment	-5 to +5 (at time of shipment/RAM initialization: 0)

15.6.1.1.17 <LPW-TIME>

T-15-239

not used

15.6.1.2 USER

15.6.1.2.1 Overview

Making User-Related Settings

15.6.1.2.2 <COPY-LIM>

T-15-240

	Use it to change the upper limit imposed on the number of copies to make.
Setting	1 to 999 [at time of shipment/after RAM initialization: 999]

15.6.1.2.3 <SLEEP>

T-15-241

	Use it to enable/disable the sleep function.
Setting	0: OFF 1: ON [at time of shipment/after RAM initialization: 1]
Reference	To set up the sleep function, use [timer setting] in user mode.

15.6.1.2.4 <COUNTER 1>

T-15-242

	Use it to set the software counter 1 on the user mode screen.
Setting	101: total 1 [at time of shipment/after RAM initialization: 1 (fixed; cannot be changed)]

15.6.1.2.5 <COUNTER 2>

T-15-243

	Use it to change the type of software counter 2 on the control panel to suit the needs of the user or dealer.

Range of setting	0 to 999 [at time of shipment/after RAM initialization: 108]
Reference	The type of counter may be changed to suit the needs of the user and dealer.

15.6.1.2.6 <COUNTER 3>

T-15-244

	Use it to change the type of soft counter 3 on the control panel to suit the needs of the user or the dealer.
Range of setting	0 to 999 [at time of shipment/after RAM initialization; 232]
Reference	The type of counter may be changed to suit the needs of the user or the dealer.

15.6.1.2.7 <COUNTER 4>

T-15-245

	Use it to change the type of software counter 4 on the control panel to suit the needs of the user or the dealer.
Range of setting	0 to 999 [at time of shipment/after RAM initialization: 324]
Reference	The type of counter may be changed to suit the needs of the user or the dealer.

15.6.1.2.8 <COUNTER 5>

T-15-246

	Use it to change the type of software counter 5 on the control panel to suit the needs of the user or the dealer.
Range of setting	0 to 999 [at time of shipment/after RAM initialization: 0]

Reference	The type of counter may be changed to suit the needs of the user or the dealer.

15.6.1.2.9 <COUNTER 6>

T-15-247

	Use it to change the type of software counter 6 on the control panel to suit the needs of the user or the dealer.
Range of setting	0 to 999 [at time of shipment/after RAM initialization: 0]
Reference	The type of counter may be changed to suit the needs of the user or the dealer.

15.6.1.2.10 Software Counter Specifications

<Software Counter Specifications>
The software counters are classified as follows according to input numbers:

T-15-248

- 000's: remote copy
- 100's: total copies
- 200's: copies
- 300's: prints
- 400's: copier + prints
- 500's: scan
- 600's: box
- 700's: received prints
- 800's: report prints

Guide to the Table
- yes: counter valid for the machine
- 4C: full color
- mono: mono color (Y, M, C/R, G, B/aged mono)
- Bk: black mono
- L: large-sized (B4 or smaller)
- S: small-size (paper of B4 or smaller)
- 1/2: under "count of," the number of counts given to large-size paper.
  You may change the following in service mode so that the paper as large as and larger than B4 is counted as large-size paper: COPIER>OPTION>USER>B4_L_CNT.
- copy: local copy + remote copy
- copy A: local copy + remote copy + box print
- print: PDL print + report print + box print
- print A: PDL print + report print
- scan: black-and-white scan + color scan

T-15-249

yes/no	No.	Description
	000	no indication
yes	002	remote copy (full color 1)
yes	003	remote copy (full color 2)
yes	004	remote copy (mono color 1)
yes	005	remote copy (mono color 2)
yes	006	remote copy (black-and-white 1)
yes	007	remote copy (blank-and-white 2)
yes	008	remote copy (full color, large)
yes	009	remove copy (full color, small)
yes	010	remote copy (mono color, large)
yes	011	remote copy (mono color, small)
yes	012	remote copy (black-and-white, large)
yes	013	remote copy (black-and-white, small)
yes	014	remote copy (full color + mono color, large)
yes	015	remote copy (full color + mono color, small)
yes	016	remote copy (full color + mono color 2)
yes	017	remote copy (full color + mono color 1)
yes	018	remote copy (full color, large, double-sided)
yes	019	remote copy (full color, small, double-sided)
yes	020	remote copy (mono color, large, double-sided)
yes	021	remote copy (mono color, small, double-sided)
yes	022	remote copy (black-and-white, large, double-sided)
yes	023	remote copy (black-and-white, small, double-sided)

T-15-250

yes/no	No.	Description
yes	101	total 1

yes/no	No.	Description
yes	102	total 2
yes	103	total (large)
yes	104	total (small)
yes	105	total (full color 1)
yes	106	total (full color 2)
yes	108	total (black-and -white 1)
yes	109	total (black-and -white 2)
yes	110	total (mono color, large)
yes	111	total (mono color, small)
yes	112	total (black-and-white, large)
yes	113	total (black-and-white, small)
yes	114	total 1 (double-sided)
yes	115	total 2 (double-sided)
yes	116	large (double-sided)
yes	117	small (double-side)
yes	118	total (mono color 1)
yes	119	total (mono color 2)
yes	120	total (full color, large)
yes	121	total (full color, small)
yes	122	total (full color + moo color, large)
yes	123	total (full color + mono color, small)
yes	124	total (full color + mono color 2)
yes	125	total (full color + mono color 1)

T-15-251

yes/no	No.	Description
yes	201	copy (total 1)
yes	202	copy (total 2)
yes	203	copy (large)

yes/no	No.	Description
yes	204	copy (small)
yes	205	copy A (total 1)
yes	206	copy A (total 2)
yes	207	copy A (large)
yes	208	copy A (small)
yes	209	local copy (total 1)
yes	210	local copy (total 2)
yes	211	local copy (large)
yes	212	local copy (small)
yes	213	remote copy (total 1)
yes	214	remote copy (total 2)
yes	215	remote copy (large)
yes	216	remote copy (small)
yes	217	copy (full color 1)
yes	218	copy (full color 2)
yes	219	copy (mono color 1)
yes	220	copy (mono color 2)
yes	221	copy (black-and-white 1)
yes	222	copy (black-and-white 2)
yes	223	copy (full color, large)
yes	224	copy (full color, small)
yes	225	copy (mono color, large)
yes	226	copy (moo color, small)
yes	227	copy (black-and-white, large)
yes	228	copy (black-and-write, small)
yes	229	copy (full color + mono color, large)
yes	230	copy (full color + mono color, small)
yes	231	copy (full color + mono color/2)
yes	232	copy (full color + mono color/1)

yes/no	No.	Description
yes	233	copy (full color, large, double-sided)
yes	234	copy (full color, small, double-sided)
yes	235	copy (mono color, large, double-sided)
yes	236	copy (mono color, small, double-sided)
yes	237	copy (black-and-white, large, double-sided)
yes	238	copy (black-and-white, small, double-sided)
yes	245	copy A (full color 1)
yes	246	copy A (full color 2)
yes	247	copy A (mono color 1)
yes	248	copy A (mono color 2)
yes	249	copy A (black-and-white 1)
yes	250	copy A (black-and-white 2)
yes	251	copy A (full color, large)
yes	252	copy A (full color, mall)
yes	253	copy A (mono color, large)
yes	254	copy A (mono color, small)
yes	255	copy A (black-and-white, large)
yes	256	copy A (black-and-white, small)
yes	257	copy A (full color + mono color, large)
yes	258	copy A (full color + mono color, small)
yes	259	copy A (full color + mono color 2)
yes	260	copy A (full color + mono color 1)
yes	261	copy A (full color, large, double-sided)
yes	262	copy A (full color, small, double-sided)
yes	263	copy A (mono color, large, double-sided)
yes	264	copy A (mono color, large, double-sided)
yes	265	copy A (black-and-white, large, double-sided)
yes	266	copy A (black-and-white, small, double-sided)
yes	273	local copy (full color 1)

yes/no	No.	Description
yes	274	local copy (full color 2)
yes	275	local copy (mono color 1)
yes	276	local copy (mono color 2)
yes	277	local copy (black-and-white 1)
yes	278	local copy (black-and-white 2)
yes	279	local copy (full color, large)
yes	280	local copy (full color, small)
yes	281	local copy (mono color, large)
yes	282	local copy (mono color, small)
yes	283	local copy (black-and-white, large)
yes	284	local copy (black-and-white, small)
yes	285	local copy (full color + mono color, large)
yes	286	local copy (full color + mono color, small)
yes	287	local copy (full color + mono color 2)
yes	288	local copy (full color + mono color 1)
yes	289	local copy (full color, large, double-sided)
yes	290	local copy (full color, small, double-sided)
yes	291	local copy (mono color, large, double-sided)
yes	292	local copy (mono color, small, double-sided)
yes	293	local copy (black-and-white, large, double-sided)
yes	294	local copy (black-and-white, small, doubles-sided)

T-15-252

yes/no	No.	Description
yes	301	print (total 1)
yes	302	print (total 2)
yes	303	print (large)
yes	304	print (small)
yes	305	print A (total 1)

yes/no	No.	Description
yes	306	print A (total 2)
yes	307	print A (large)
yes	308	print A (small)
yes	309	print (full color 1)
yes	310	print (full color 2)
yes	311	print (mono color 1)
yes	312	print (mono color 2)
yes	313	print (black-and-white 1)
yes	314	print (black-and-white 2)
yes	315	print (full color, large)
yes	316	print (full color, small)
yes	317	print (mono color, large)
yes	318	print (mono color, small)
yes	319	print (black-and-white, large)
yes	320	print (black-and-large, small)
yes	321	print (full color + mono color, large)
yes	322	print (full color + mono color, small)
yes	323	print (full color + mono color/2)
yes	324	print (full color + mono color/1)
yes	325	print (full color, large, double-sided)
yes	326	print (full color, small, double-sided)
yes	327	print (mono color, large, double-sided)
yes	328	print (mono color, small, double sided)
yes	329	print (black-and-white, large, double-sided)
yes	330	print (black-and -white, small, double-sided)
yes	331	PDL print (total 1)
yes	332	PDL print (total 2)
yes	333	PDL print (large)
yes	334	PDL print (small)

yes/no	No.	Description
yes	335	PDL print (full color 1)
yes	336	PDL print (full color 2)
yes	339	PDL print (black-and-white 1)
yes	340	PDL print (black-and-white 2)
yes	341	PDL print (full color, large)
yes	342	PDL print (full color, small)
yes	345	PDL print (black-and-white, large)
yes	346	PDL print (black-and-white, small)
yes	351	PDL print (full color, large, double-sided)
yes	352	PDL print (full color, small, double-sided)
yes	355	PDL print (black-and-white, large, double-sided)
yes	356	PDL print (black-and-white, small, double-sided)

T-15-253

yes/no	No.	Description
yes	401	copy + print (full color, large)
yes	402	copy + print (full color, small)
yes	403	copy + print (black-and-white, large)
yes	404	copy + print (black-and-white, small)
yes	405	copy + print (black-an-white 2)
yes	406	copy + print (black-and-white 1)
yes	407	copy + print (full color + mono color, large)
yes	408	copy + print (full color + mono color, small)
yes	409	copy + print (full color + mono color/2)
yes	410	copy + print (full color + mono color/1)
yes	411	copy + print (large)
yes	412	copy + print (small)
yes	413	copy + print (2)
yes	414	copy + print (1)

yes/no	No.	Description
yes	415	copy + print (mono color, large)
yes	416	copy + print (mono color, small)
yes	417	copy + print (full color, large, double-sided)
yes	418	copy + print (full color, small, double-sided)
yes	419	copy + print (mono color, large, double-sided)
yes	420	copy + print (mono color, small, double-sided)
yes	421	copy + print (black-and-white, large, double-sided)
yes	422	copy + print (back-and-white, small, double-sided)

T-15-254

yes/no	No.	Description
yes	501	scan (total 1)
-	502	scan (total 2)
-	503	scan (large)
-	504	scan (small)
yes	505	black-and-white (total 1)
-	506	black-and-white (total 2)
-	507	black-and-white (large)
-	508	black-and-white scan (small)
yes	509	color scan (total 1)
-	510	color scan (total 2)
-	511	color scan (large)
-	512	color scan (small)

T-15-255

yes/no	No.	Description
yes	601	box print (total 1)
yes	602	box print (total 2)

yes/no	No.	Description
yes	603	box print (large)
yes	604	box print (small)
yes	605	box print (full color 1)
yes	606	box print (full color 2)
yes	607	box print (mono color 1)
yes	608	box print (mono color 2)
yes	609	box print (black-and-white 1)
yes	610	box print (black-and-white 2)
yes	611	box print (full color, large)
yes	612	box print (full color, small)
yes	613	box print (mono to color, large)
yes	614	box print (mono color, small)
yes	615	box print (black-and-white, large)
yes	616	box print (black-and-white, small)
yes	617	box print (full color + moo color, large)
yes	618	box print (full color + mono color, small)
yes	619	box print (full color + mono color 2)
yes	620	box print (full color + mono color 1)
yes	621	box print (full color, large, double-sided)
yes	622	box print (full color, small, double-sided)
yes	623	box print (mono color, large, double-sided)
yes	624	box print (mono color, small, double-sided)
yes	625	box print (black-and-white, large, double-sided)
yes	626	box print (back-and-white, small, double-sided)

T-15-256

yes/no	No.	Description
yes	701	reception print (total 1)
yes	702	reception print (total 2)

yes/no	No.	Description
yes	703	reception print (large)
yes	704	reception print (small)
-	705	reception print (full color 1)
-	706	reception print (full color 2)
-	707	reception print (grayscale 1)
-	708	reception print (grayscale 2)
yes	709	reception print (black-and-white 1)
yes	710	reception print (black-and-white 2)
-	711	reception print (full color, large)
-	712	reception print (full color, small)
-	713	reception print (grayscale, large)
-	714	reception print (grayscale, small)
yes	715	reception print (black-and-white, large)
yes	716	reception print (black-and-white, small)
-	717	reception print (full color + grayscale, large)
-	718	reception print (full color + grayscale, small)
-	719	reception print (full color + grayscale 2)
-	720	reception print (full color, grayscale 1)
-	721	reception print (full color, large, double-sided)
-	722	reception print (full color, small, double-sided)
-	723	reception print (grayscale, large, double-sided)
-	724	reception print (grayscale, small, double-sided)
yes	725	reception print (black-and-white, large, double-sided)
yes	726	reception print (black-and-white, small, double-sided)

T-15-257

yes/no	No.	Description
yes	801	report print (total 1)
yes	802	report print (total 2)

yes/no	No.	Description
yes	803	report print (large)
yes	804	report print (small)
-	805	report print (full color 1)
-	806	report print (full color 2)
-	807	report print (grayscale 1)
-	808	report print (grayscale 2)
yes	809	report print (black-and-white 1)
yes	810	report print (black-and-white 2)
-	811	report print (full color, large)
-	812	report print (full color, small)
-	813	report print (grayscale, large)
-	814	report print (grayscale, small)
yes	815	report print (black-and-white, large)
yes	816	report print (black-and-white, small)
-	817	report print (full color + grayscale, large)
-	818	report print (full color + grayscale, small)
-	819	report print (full color + grayscale 2)
-	820	report print (full color + grayscale 1)
-	821	report print (full color, large, double-sided)
-	822	report print (full color, small, double-sided)
-	823	report print (grayscale, large, double-sided)
-	824	report print (grayscale, small, double-sided)
yes	825	report print (black-and-white, large, double-sided)
yes	826	report print (black-and-white, small, double-sided)

T-15-258

yes/no	No.	Description
-	901	copy scan total 1 (color)
-	902	copy scan total 1 (black-and-white)

yes/no	No.	Description
-	903	copy scan total 2 (color)
-	904	copy scan total 2 (black-and-white)
-	905	copy scan total 3 (color)
-	906	copy scan total 3 (black-and-white)
-	907	copy scan total 4 (color)
-	908	copy scan total 4 (black-and-white)
-	909	local copy scan (color)
-	910	local coy scan (black-and-white)
-	911	remote copy scan (color)
-	912	remote copy scan (black-and-white)
-	913	transmission scan total 1 (color)
-	914	transmission scan total 1 (black-and-white)
yes	915	transmission scan total 2 (color)
yes	916	transmission scan total 2 (black-and-white)
yes	917	transmission scan total 3 (color)
yes	918	transmission scan total 3 (black-and-white)
-	919	transmission scan total 4 (color)
-	920	transmission scan total 4 (black-and-white)
yes	921	transmission scan total 5 (color)
yes	922	transmission scan total 5 (black-and-white)
yes	929	transmission scan total 6 (color)
yes	930	transmission scan total 6 (black-and-white)
-	931	transmission scan total 7 (color)
-	932	transmission scan total 7 (black-and-white)
-	933	transmission scan total 8 (color)
-	934	transmission scan total 8 (black-and-white)
-	935	universal transmission scan total (color)
-	936	universal transmission scan total (black-and-white)
yes	937	box scan (color)

yes/no	No.	Description
yes	938	box scan (black-and-white)
yes	939	remote scan (color)
yes	940	remote scan (black-and-white)
-	941	transmission scan/fax (color)
-	942	transmission scan/fax (black-and-white)
-	943	transmission scan/i fax (color)
-	944	transmission scan/i fax (black-and-white)
yes	945	transmission scan/e-mail (color)
yes	946	transmission scan/e-mail (black-and-white)
-	947	transmission scan/FTP (color)
-	948	transmission scan/FTP (black-and-white)
-	949	transmission scan/SMB (color)
-	950	transmission scan/SMB (black-and-white)
-	951	transmission scan/IPX (color)
-	952	transmission scan/IPX (white-and-white)
-	953	transmission scan/database (color)
-	954	transmission scan/database (black-and-white)
-	955	transmission scan/local print (color)
-	956	transmission scan/local print (black-and-white)
-	957	transmission scan/box (color)
-	958	transmission scan/box (black-and-white)

15.6.1.2.11 <CONTROL>

T-15-259

	Use it to limit the use of a control card for a PDL job.
setting	0: disable 1: enable [at time of shipment/after RAM initialization: 0]

15.6.1.2.12 <B4-L-CNT>

T-15-260

	Use it to set so that soft counters 1 through will count B4 as being of large size or small size.
Setting	0: small size 1: large size [at time of shipment/after RAM initialization: 0]

15.6.1.2.13 <COPY-JOB>

T-15-261

	Use it to disable the copy job reservation function when the card reader or the coin vendor is in use.
Setting	0: enable copy job reservation function 1: disable copy job reservation function [at time of shipment/after initialization: 0]

15.6.1.2.14 <IDPRN-SW>

T-15-262

	Use it to switch between types of count jobs for group counters.
Setting	0: count the following for PRINT: box print, report print, send local print, PDL print. 1: count the following for PRINT: report printout, send local print, PDL print [at time of shipment/after RAM initialization: 0]

15.6.1.2.15 <CPRT-DSP>

T-15-263

not used

15.6.1.2.16 <CNT-SW>

T-15-264

	Use it to switch between counter display items.
	counters to use
when set to '0'	101 total 1 108 total <black-and-white 1> 232 copy <full color + mono color/1> 324 print <full color + mono color/1>
when set to '1'	102 total 2 231 copy <full color + mono color/2> 222 copy <black-and-white 2> 133 total A <black-and-white 2> [at time of shipment/after RAM initialization: 0]

15.6.1.2.17 <REMPNL>

T-15-265

not used

15.6.1.2.18 <BCNT-AST>

T-15-266

	Use it to set a count for Box printing in relation to the NE controller.
Setting	0: count box print job as PDL job 1: count box print job as copy job [at time of shipment/after RAM initialization: 0]

15.6.1.2.19 <DFLT-CPY>

T-15-267

	Use it to set the default color mode for COPY.
setting	0: ACS 1: full color 2: black-and-white JPN [at time of shipment/after RAM initialization: 2] UL [at time of shipment/after RAM initialization: 0] EUR [at time of shipment/after RAM initialization: 2] other destination [at time of shipment/after RAM initialization: 2]

15.6.1.2.20 <DFLT-BOX>

T-15-268

	Use it to set the default color mode for BOX.
setting	0: ACS 1: full color 2: black-and-white JPN [at time of shipment/after RAM initialization: 2] UL [at time of shipment/after RAM initialization: 0] EUR [at time of shipment/after RAM initialization: 2] other destinations [at time of shipment/after RAM initialization: 2]

15.6.1.2.21 <DOC-REM>

T-15-269

	Use it to enable/disable the message used to prompt removal of originals.
setting	0: disable 1: enable [at time of shipment/after RAM initialization: 0]

15.6.1.3 CST

15.6.1.3.1 Overview

Registering the Envelope Cassette Size

15.6.1.3.2 <ENV1/ENV2>

T-15-270

	Use it to register the size of the envelope cassette.
setting	21: ISO-C5 [after RAM initialization: 21] 22: COM10 23: MONARCH 24: DL 25: ISO-B5 26: YOKEI No. 4

15.6.1.4 ACC

15.6.1.4.1 Overview

Making Accessory-Related Machine Settings

15.6.1.4.2 <COIN>

T-15-271

	Use it to enable/disable the coin vendor function.
setting	0: OFF [at time of shipment/after RAM initialization: 0] 1: ON

15.6.1.4.3 <DK-P>

T-15-272

	Use it to set the paper size for the paper deck (option).
setting	0: A4 [at time of shipment/after RAM initialization: 0] 1: not supported 2: LTR

15.6.1.4.4 <CARD-SW>

T-15-273

	Use it to switch between UI screens for support of the coin vendor function.
setting	0: coin [at time of shipment/after RAM initialization: 0] 1: card 2: coin & card

15.6.1.4.5 <OUT-TRAY>

T-15-274

	use it to specify the presence/absence of a No. 3 delivery tray.
setting	0: absent [at time of shipment/after RAM initialization: 0] 1: present

15.6.1.5 INT-FACE

15.6.1.5.1 Overview

Setting Up Conditions for Connection to an External Controller

---

15.6.1.5.2 <IMG-CONT>

T-15-275

	Use it to make settings for connection to an EFI controller.
setting	0: normal operation 1: not used 2: not used 3: EFI controller in use 4: not used 5: not used
Caution	If set to '1', the following returns to its initial setting: - system control setup>network setup>TCP/IP setup>IP address setup>IP address

- system control setup>network setup>TCP/IP setup>IP address setup>sub net mask
- system control setup>network setup>IP address setup>gateway address
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>communication system
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>Ethernet type
- system control setup>network setup>TCP/IP setup>start-up time

Moreover, the following user mode settings will be set to OFF.

- system control setup>network setup>TCP/IP setup>IP address setup>DHCP in use
- system control setup>network setup>TCP/IP setup>IP address setup>RARP in use
- system control setup>network setup>TCP/IP setup>IP address setup>BOOTP in use
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>auto detection
- system control setup>network setup>spool function in use
- If set to '3' or '4', the following settings will be OFF in addition to the foregoing:
- system control setup>network setup>TCP/IP setup>RAW setup
- system control setup>network setup>TCP/IP setup>LPD setup
- system control setup>network setup>TCP/IP setup>IPP print
- system control setup>network setup>SMB setup

You will have to newly make settings for the foregoing items, as they will not return to their initial settings even when '0: normal mode' is selected.

- system control setup>network setup>TCP/IP setup>IP address setup>sub net mask
- system control setup>network setup>TCP/IP setup>IP address setup>gateway address
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>communication method
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>Ethernet type
- system control setup>network setup>TCP/IP setup>startup

Moreover, the following user mode settings will be OFF:

- system control setup>network setup>TCP/IP setup>IP address setup>DHCP in use
- system control setup>network setup>TCP/IP setup>IP address setup>RARP in use
- system control setup>network setup>TCP/IP setup>IP address setup>BOOTP in use
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>auto detection
- system control setup>network setup>spool function in use
- If '3' or '4' is set, the following settings will be OFF in addition to the foregoing items:
- system control setup>network setup>TCP/IP setup>RAW setup
- system control setup>network setup>TCP/IP setup>LPD setup
- system control setup>network setup>TCP/IP setup>IPP print
- system control setup>network setup>SMB setup

You will have to newly make settings for the foregoing items, as they will not return to their initial settings even when '0: normal mode' is selected.

15.6.1.6 COMBO

15.6.1.6.1 Overview

Setting Up Operation by Mode Combination

15.6.1.6.2 <PPR/COL/MOD-SLCT>

T-15-276

	Use it to select paper type, pickup mode, and color mode for which the secondary transfer bias should be applied (during a specific period of time after the leading edge of paper reaches the secondary transfer roller). Use it if white spots occur along the image leading edge for a specific type of paper, pickup mode, or color mode.
setting	PPR-SLCT 1: plain paper 2: heavy paper 3: tracing paper 4: transparency 5: postcard/envelope 6: label sheet 7: special paper [at time of shipment/after RAM initialization: 1]
setting	COL-SLCT 1: mono color mode 2: full color mode [at time of shipment/after RAM initialization: 1]
setting	MOD-SLCT 1: single-sided 2: 2nd side of double-sided (from cassette) 3: 2nd side of double-sided (from manual feeder) [at time of shipment/after RAM initialization: 1]
Reference	When you press any of 2TR-SW1 through 2TR-SW5 after setting up a value for PPR-SLCT, COL-SLCT, or MOD-SLCT, the machine will register PPR-SLCT,COL-SLCT, or MOD-SLCT for the corresponding SW, thus enabling the switch.

15.6.1.6.3 <2TR-SW1/SW2/SW3/SW4/SW5>

T-15-277

Use it to enable the combination of paper type, pickup mode, and color mode you have selected using PPR-SLCT, COL-SLCT and MOD-SLCT.

15.6.2 SORTER

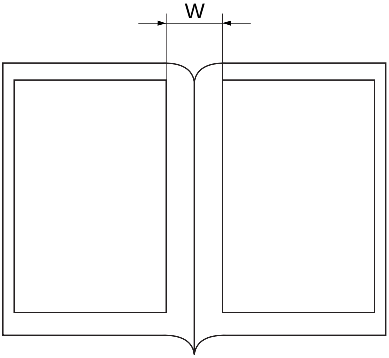
15.6.2.1 Overview

Making Finisher-Related Machine Settings

15.6.2.2 <BLNK-SW>

T-15-278

	Use it to set the marking width (W) for both sides of the crease for the saddle stitcher in use.
Setting	0: normal width (5 mm) 1: large width (10 mm) [at time of shipment/after RAM initialization: 1]



F-15-22

15.6.2.3 <MD-SPRTN>

T-15-279

	Use it to limit the finisher functions.
setting	0: normal 1: enable functional separation [at time of shipment/after RAM initialization: 0]

15.6.3 BOARD

15.6.3.1 Overview

Making Option Board-Related Machine Settings

15.6.3.2 <SURF-OFF>

T-15-280

	Use it to enable/disable the UFR board function.
setting	0: enable operation as copier model without E code indication in absence of UFR board 1: check presence of UFR board; if absent, indicate E code [at time of shipment/after RAM initialization: 0]

15.6.4 OPTION（mechanical specifications setting mode）:Level 2

15.6.4.1 COPIER

15.6.4.1.1 BODY

<CONTRAST>

T-15-281

	Use it to set auto/manual setting of target contrast potential.
setting	0: manual 1: Auto [at time of shipment/after RAM initialization: 1]

<SPCL-PPR>

T-15-282

	Use it to enable/disable the start-up mechanism in low-temperature mode, thus ensuring good fixing in a low temperature environment.
setting	0: OFF [at time of shipment/after RAM initialization: 0] 1: ON
Caution	Enabling it (ON) increases FCOT (first copy time) by about 20 sec.

<SCANSLCT>

T-15-283

	Use it to enable/disable the function the machine uses to compute the scan area based on the selected paper size.
setting	0: OFF (determine scan based on original size) 1: ON (determine scan area based on paper size) [at time of shipment/after RAM initialization: 0]

<DH-SW>

T-15-284

	Use it to execute Dhalf correction.
setting	0: enable Dhalf control 1: disable Dhalf control [at time of shipment/after RAM initialization: 1]

<DH-SW>

T-15-285

Execution of Developing Tone Density Correction Control

setting 0: Not executed
1: Executed (During initial rotations at first thing in the morning/when conditions for a startup of the control are satisfied.)
[Factory default/After RAM is cleared: 1]
2: Executed (During initial rotations at first thing in the morning/when conditions for a startup of the control are satisfied, or during the recovery control from toner cartridge replacement)
3: Spare

<SENS-CNF>

T-15-286

Use it to select the original sensor configuration.

setting 0: AB-configuration [at time of shipment/after RAM initialization: 0]
1: Inch-configuration

<RAW-DATA>

T-15-287

Use it to specify how received data should be printed out.

setting 0: normal operation

1: print as is

[at time of shipment/after RAM initialization: 0]

If received images have a fault, use it to isolate the cause between data itself and image processing.

<RMT-LANG>

T-15-288

Method of setting	Use it to select a language code by means of the +/- key of the remote UI used through the Web.

<IFAX-LIM>

T-15-289

	Use it to limit the number of output lines for a large volume of data coming through i-fax.
setting	0: no limit
	0 to 999 [at time of shipment/after RAM initialization: 500]

<SMTPTXPN>

T-15-290

	Use it to change the SMTP transmission port number.
Range of setting	0 to 65535 (increments of '1')
	[at time of shipment/after RAM initialization: 25]

<SMTPRXPN>

T-15-291

	Use it to change the SMTP reception port number.
Range of setting	0 to 65535 (in increments of '1')
	[at time of shipment/after RAM initialization: 25]

<POP3PN>

T-15-292

	Use it to change the POP reception port number.
Range of setting	0 to 65535 (in increments of '1')
	[at time of shipment/after RAM initialization: 110]

<ORG-LGL>

T-15-293

	Use it to set a special paper whose size may not be recognized by the DF.
setting	0: LEGAL [at time of shipment/after RAM initialization]
	1: FOOLSCAP
	2: A-FOOLSCAP
	3: FORIO
	4: G-LEGAL
	5: OFFICIO
	6: E-OFFICIO

7: A-OFFICIO

8: B-OFFICIO

9: A-LEAGAL

10: M-OFFICIO

<ORG-LTR>

T-15-294

	Use it to set a special paper whose size may not be recognized by the DF.
setting	0: LTR [at time of shipment/after RAM initialization]
	1: G-LTR
	2: A-LTR
	3: EXECUTIVE

<ORG-LTRR>

T-15-295

	Use it to set a special paper whose size may not be recognized by the DF.
setting	0: LTR-R [at time of shipment/after RAM initialization]
	1: G-LTR-R
	2: A-LTR-R
	3: OFFICIO
	4: E-OFFICIO
	5: EXECTIVE-R

<ORG-LDR>

T-15-296

	Use it to set a special paper whose size may not be recognized by the DF.
setting	0: LDR [at time of shipment/after RAM initialization] 1: A-LTR

<ORG-B5>

T-15-297

	Use it to set a special paper whose size may not be recognized by the DF.
setting	0: B5 [at time of shipment/after RAM initialization] 1: K-LEAGAL

<UI-BOX>

T-15-298

	Use it to enable/disable the control panel box screen.
setting	0: disable 1: enable [at time of shipment/after RAM initialization]

<UI-SEND>

T-15-299

	Use it to enable/disable the display of the transmission screen on the control panel.
setting	0: disable 1: enable [at time of shipment/after RAM initialization]

<UI-FAX>

T-15-300

	Use it to enable/disable the display of the environment screen on the control panel.
setting	0: disable 1: enable [at time of shipment/after RAM initialization]

<UI-EXT>

T-15-301

	Use it to enable/disable the display of the extended screen on the control panel.
setting	0: disable 1: enable [at time of shipment/after RAM initialization]

<Y-PTN>

T-15-302

	Use it to set dots before development.
setting	0: disable
	1: normal [at time of shipment/after RAM initialization]
	2: many

<SCR-SLCT>

T-15-303

	Use it to specify how halftone must be processed in photo mode.
setting	0: use error diffusion
	1: use low-number screen [at time of shipment/after RAM initialization]
	2: use high-number screen

<TMC-SLCT>

T-15-304

	Use it to switch between coefficients for error diffusion.
setting	0: standard
	1: Texture Feel Smooth (less coarse)/stability low
	2: Texture Feel Rough (more coarse)/stability high

<DEVL-VTH>

T-15-305

Use it to set the video count for operation of toner forced consumption sequence.

Avoid its use as much as possible if operation is normal.

<FTPTXPN>

T-15-306

	Use it to select a name for the target SEND port (FTP).
Range of Setting	0 through 65535 (16-bit) [at time of shipment/after RAM initialization: 21]

<SLPOFF 01 to 12>

T-15-307

	Use it to enable/disable the anti-condensation function for specific calendar months.
setting	0: enable [at time of shipment/after RAM initialization] 1: disable

<DWNSQ-SW>

T-15-308

Use it to improve stacking on the tray for single-sided continuous printing.

(Avoid its use as much as possible if operation is normal.)

<PRN-FLG>

T-15-309

Use it to select a flag for the PDL image area.

(Avoid its use as much as possible if the operation is normal.)

<SCN-FLG>

T-15-310

Use it to select a flag for the copy image area.

(Avoid its use as much as possible if the operation is normal.)

<T-LW-LVL>

T-15-311

Use it to switch between the display timing for the toner replacement warning message.

(Avoid its use as much as possible if the operation is normal.)

<NWERR-SW>

T-15-312

	Use it to enable/disable network-related error messages.
setting	0: disable enable [at time of shipment/after RAM initialization]

<FX-SPD>

T-15-313

	Use it to adjust the speed of the fixing roller.
Range of setting	-2 to 2 [at time of shipment/after RAM initialization: 0]
	A higher setting will increase the speed of the fixing roller. A setting made using this mode item will automatically change the rotation speed of the delivery vertical path motor.

<FX-SUB>

T-15-314

	Use it to change the activation ratio of the sub heater.
setting	0: no change 1: +1 sec 2: -1 sec

<STS-PORT>

T-15-315

	Use it to set the TOT synchronous type command communication port.
setting	0: OFF 1: ON

<CMD-PORT>

T-15-316

	Use it to set the TOT asynchronous type status communication port.
setting	0: OFF 1: ON

<MODELSZ2>

T-15-317

	Use it to set the global support function for book mode original detection.
setting	0: normal 1: AB-configuration/Inch-configuration mixed detection

<LST-TNSW>

T-15-318

	Use it to set the toner forced consumption sequence for last rotation.
setting	0: disable 1: enable [at time of shipment/after RAM initialization]

<UISW-DSP>

T-15-319

not used

<NS-CMD5>

T-15-320

	Use it to set CRAM-MD5 authentication under SMTP authentication.
setting	0: dependent on SMTP server 1: disable

<NS-GSAPI>

T-15-321

	Use it to set GSSAPI authentication under SMTP authentication.
setting	0: dependent on SMTP server 1: disable

<NS-NTLM>

T-15-322

	Use it to set NTLM authentication under SMTP authentication.
setting	0: dependent on SMTP server 1: disable it

<NS-PLNWS>

T-15-323

Use it to set PLAIN LOGIN authentication under SMTP authentication.
<environment in which communication packets are subjected to coding>

setting	0: dependent on SMTP server 1: disable

<NS-PLN>

T-15-324

Use it to set PLAIN LOGIN under SMTP authentication.
<environment in which communication packages are not subjected to coding>

setting	0: dependent on SMTP server 1: disable

<NS-LGN>

T-15-325

Use it to set LOGIN authentication under SMTP authentication.

setting	0: dependent on SMTP server 1: disable

<T-CRG-SW>

T-15-326

	Use it to permit/not permit replacement of a toner cartridge by the user in the presence of toner.
setting	0: do not permit replacement [at time of shipment/after RAM initialization] 1: permit replacement
Caution (if set to '1')	- Toner can start to leak when the toner cartridge is removed. Advise the user to take care when removing the cartridge. - Fitting a toner cartridge will cause the machine to always indicate a 100% full toner cartridge message regardless of the amount of toner inside the cartridge (existing or new), resetting the previous message. Inform the user that the machine may indicate the Add Toner message while the indication is not 0% if this has been done.

<T-CRG-SW>

T-15-327

	Use it to permit/not permit replacement of a toner cartridge by the user in the presence of toner.
setting	0: do not permit replacement [at time of shipment/after RAM initialization] 1: permit replacement

Caution (if set to '1')

When "1" is selected, a toner cartridge replacement button will be displayed on the operation panel all the time, and user will enable to replace the toner cartridge anytime regardless of the amount of remaining toner. However, it is necessary to instruct the following points to user beforehand so that user will keep them in mind when using this function.

- Care should be taken to remove the toner cartridge. Toner might leak from the cartridge, soiling around the cartridge replacement slot.

- The toner level meter displayed up to now will be cleared when replacement steps for the toner cartridge (press a toner cartridge replacement button -> open and then close the toner cartridge replacement cover/front cover) are performed. (The meter will be returned to 100%.) The meter will be cleared even when the toner cartridge is not actually replaced at this time.
Therefore, if only the replacement steps are performed without replacing with a new cartridge, and copies/prints are made in subsequent operations, the message "No toner" might be displayed even when the meter is not 0%. (Toner has run out in fact.)

<EX-MTR1>

T-15-328

Use it to fine-adjust the speed of the No. 1 delivery motor and the buffer motor.

Range of settings

-1 to +1
[at time of shipment/after RAM initialization: 0]

<EX-MTR2>

T-15-329

	Use it to fine-adjust the speed of the accessory delivery motor.
Range of settings	-1 to +1 [at time of shipment/after RAM initialization: 0]

<LPM-PTRN>

T-15-330

	Use it to set the operation temperature used upon return (low-temperature mode).
setting	0: normal 1: 180 deg C 2: 185 deg C 3: 190 deg C

<TNR-DWN>

T-15-331

	Use it to set a toner deposit amount.
setting	0: normal 1: smaller amount

<TMIC-BK>

T-15-332

	Use it to set end edge correction for BkLUT for Tmic PDL and BkLUT for Copy under Tmic.
setting	0: PDL ON, Copy OFF PDL ON, Copy OFF [at time of shipment/after RAM initialization] 1: PDL OFF, Copy OFF 2: PDL ON, Copy ON 3: PDL OFF, Copy ON

<DH-MODE>

T-15-333

	Use it to select patch image read data (high density side) for patch image detection gradation correction (other than full correction).
setting	0: use patch image read data used for patch image read data [at time of shipment/ after RAM initialization] 1: do not use patch image reading data used for full correction

<TBLD-TMG>

T-15-334

	Use it to set the ITB cleaning execution timing for normal speed/full color mode. When making copies/points in normal speed/full-color mode, the ITB cleaning blade is brought into contact later than normal.
setting	0: do not delay [at time of shipment/after RAM initialization] 1: delay

Use this mode item to correct color displacement occurring when copies/prints are made in full-color/normal speed mode. Its use, however, will lower productivity.

<2T-R-TMG>

T-15-335

Use it to set the timing at which the secondary transfer outside roller cleaning is executed in normal speed/mono color mode.

Use it to change the timing at which the secondary transfer outside roller is brought into contact in normal-speed/mono color mode.

setting	0: do not delay [at time of shipment/after RAM initialization] 1: delay

Use this mode item to correct exposure displacement when copies/prints are made in mono color/normal speed mode.

<FXWRNLVL>

T-15-336

Use it to change the alert level of the fixing counter reading. Be sure to set it to suit the new part when you have replaced the fixing roller or the fixing unit (as when the part has reached the end of its life).

Default:	0
Setting:	0: 100,000 prints
	1: 120,000 prints
	2: 140,000 prints

<FXERRLVL>

T-15-337

Use it to change the error level for the fixing counter reading. Be sure to set it to suit the new part when you have replaced the fixing roller or the fixing unit (as when the part has reached the end of its life).
The mechanism uses a fixing error level obtained by offsetting the setting made in fixing upper roller alert level change mode
(COPIER>OPTION>BODY>FXWRNLVL) by the following:

Default: 0

Setting: 0: +20,000 prints

1: +40,000 prints

2: +60,000 prints

<FXMSG-SW>

T-15-338

Use it to enable/disable the message appearing on the User Control screen when the fixing counter reading reaches a specific count (end of life), promoting the user to be ready for replacement of the fixing assembly.

Default: 1

Setting: 0: disable display

1: enable display

<HP-SW>

T-15-339

	ITB HP marking (2 pc.) switching for full color image formation
Setting	0: switch at cumulative count of 5 secondary transfers (setting at time of factory shipment/RAM initialization) 1: do not switch 2: switch at cumulative count of 10 secondary transfers 3: switch at cumulative count of 3 secondary transfers
	If a nip trace is noted, set it to '3', at the risk, however, of a drop in productivity.

<DV-RT-MD>

T-15-340

	Switching on/off the idle rotation of the developing cylinder
Setting	0: ON (idle rotation is set on)[selected at factory / after RAM clear] 1: OFF (idle rotation is set off)
Caution	Avoid switching as much as possible while the machine works normally.

<BK-MD-SW>

T-15-341

	Selecting an initial rotation mode
Setting	0: Normal mode [selected at factory/ after RAM clear] 1: Bk special mode

<BK-SPD>

T-15-342

Switching the Bk print mode

(Avoid switching as much as possible while the machine works normally.)

<BND-RDCT>

T-15-343

Switching the drum cleaning control mode

(Avoid switching as much as possible while the machine works normally.)

15.6.4.1.2 USER

<SIZE-DET>

T-15-344

	Use it to turn on/off the original size detection function.
setting	0: off (The scanner will not go on when the copyboard is opened/closed, thereby preventing the glare of the lamp. 1: ON [at time of shipment/after RAM initialization]

<DATE-DSP>

T-15-345

	Use it to change the date indication.
setting	0: YYMM/DD 1: DD/MM'YY 2: MM/DD/YY

<MB-CCV>

T-15-346

	Use it to limit the individuals holding control cards for mail boxes.
setting	0: do not limit[at time of shipment/after RAM initialization: 0] 1: limit

<TRY-STP>

T-15-347

	Use it to specify how output is made when the tray becomes full.
setting	0: normal mode (cut operation when the finisher tray becomes full) 1: cut based on height detection

<MF-LG-ST>

T-15-348

	Use it to set the extra-length key mode.
setting	0: normal 1: enable display of the Extra Length key in extension mode.

<CNT-DISP>

T-15-349

	Use it to enable/disable indication of the serial number of the machine in response to a press on the Counter Check key.
setting	0: enable 1: disable

<NW-SCAN>

T-15-350

	Use it to permit/not permit the network scan function.
setting	0: do not permit 1: permit (invalid if UFR board or open I/F board is not connected)

<FX-LIM>

not used

<HDCR-DSP>

T-15-351

	Use it to enable/disable display and operation of HDD initialization for Additional Function.
setting	0: do not display and do not initialize 1: for '0', initialize once 2: at random (data), initialize once 3: at random (data), initialize 3 times

<JOB-INVL>

T-15-352

	Use it to set intervals for job interruption.
setting	0: standard (at time of interrupt mode, generate next job in succession) 1: start next job after delivery of last of interrupt job 2: start next job after delivery of last sheet of group of jobs

<LGSW-DSP>

T-15-353

	Use it to enable/disable display of 'log indication on/off setup' on the Additional Function screen.
setting	0: disable display of 'log display on/off setup'
	1: enable 'log display on/off setup'

<PCL-COPY>

T-15-354

	Use it to set PCL command (COPIES Menu/Pinatubo/Hood) compatibility mode.
setting	0: control on page basis according to COPIES command value set on individual pages [at time of shipment/after RAM initialization]
	1: Menu/Pinatubo/Hood compatibility mode
	2: reserved

<PRJOB-CP>

T-15-355

	Use it to set the CCV count pulse for reception/report output.
setting	0: do not generate count pulse [at time of shipment/after RAM initialization] 1: generate count pulse

<SND-RATE>

T-15-356

	Use it to set a compression rate for SEND-RATE (i.e., when 'high' is selected under SEND for compression rate).
setting	0: rate of compression 1/16 [at time of shipment/after RAM initialization] 1: rate of compression 1/20 2: rate of compression 1/24 A higher rate of compression means a lower image level.

15.6.4.1.3 CST

<U1-NAME to U4-NAME>

T-15-357

	Use it to enable/disable indication of paper names identified according to paper size groups (U1 through U4).
setting	0: indicate U1, U2, U3, or U4 on touch panel (default) 1: indicate paper names as selected in service mode (CST-U1, -U2, -U3, -U4).

<CST-U1/U2/U3/U4>

T-15-358

	Use it to select paper names for paper size groups (U1 through U4).
setting	24: Foolscap (CST-U2, default) 25: Australian Foolscap 26: Officio 27: Ecuadorian Officio 28: Bolivian Officio 29: Argentine LTR (U4, default) 30: Argentine LTR-R 31: Government LTR (U1, default) 32: Government LTR-R 34: Government LGL (U3, default) 35: Folio 36: Argentine Officio 37: Mexican Officio 38: Executive

15.6.4.1.4 ACC

<STPL-LMT>

T-15-359

	Use it to set a limit to the number of sheets that may be saddle-bound.
setting	0: 5 (w/o white band) 1: 10 (w/o while band)

2: 10 (w/ white band)

3: 15 (w/ white band)
[at time of shipment/after RAM initialization]

<SC-TYPE>

T-15-360

Use it to select the type of coin vendor model

(not used normally)

<CC-SPSW>

T-15-361

Use it to select the control card (CC IV/CC V) I/F support level.

setting	0: do not support [at time of shipment/after RAM initialization] 1: support (priority on speed) 2: support (priority on upper limit) - If it is set to '1', the machine may not be ale to make an accurate stop based on an upper limit, as it puts priority on the maintenance of engine performance. - If it is set to '2', the machine will be able to use proper control based on an upper limit, but may suffer from a drop in engine performance depending on which source of paper it uses.

15.6.4.1.5 INT-FACE

<AP-OPT >

T-15-362

	Use it to enable/disable printing from PrintMe (application bundled with the PS print server unit).
setting	0: permit printing by specific account 1: permit printing by any account [at time of shipment/after RAM initialization] 2: do not permit printing (permitting only for specific group ID)

<AP-ACCNT>

T-15-363

	Use it to set a group ID for a print job (CPCA) from PintMe (application bundled with the PS print server unit).
Range of settings	0 to 9999999 [at time of shipment/after RAM initialization: 0]

<AP-CODE>

T-15-364

	Use it to set a path code for a print job (CPCA) from PrintMe (application bundled with the PS print server unit).
Range of settings	0 to 9999999 [at time of shipment/after RAM initialization: 0]

15.6.4.2 BOARD

15.6.4.2.1 <MENU-1 to 4>

Indication of Levels 1 Through 4 for the Printer Setup Menu

T-15-365

	0: do no indicate [at time of shipment/after RAM initialization]
setting	1: indicate

15.7 TEST （Test Print Mode）

15.7.1 COPIER

15.7.1.1 PG

15.7.1.1.1 Overview

Preparing for Test Printing

15.7.1.1.2 <TYPE>

T-15-366

	Enter the number (TYPE) of the test print you want, and press the Start key to start printing. (Be sure to set it back to '0' after printing.)
Setting	0: normal print (0 to 100; see the table below)

T-15-367

- PG>TYPE input No./test print

Input No.	Description
0	image from CCD (normal print)
1	for R&D
2	for R&D
3	for R&D
4	16-gradation
5	full halftone

- PG>TYPE input No./test print

Input No.	Description
6	grid
7	for R&D
8	for R&D
9	for R&D
10	MCYBk horizontal stripe
11	for R&D
12	YMCBk 64-gradation
13	for R&D
14	full color 16-gradation
15 to 100	for R&D

15.7.1.1.3 <TXPH>

T-15-368

Setting	Use it to set image mode for test print output. 0: T-MIC (no end edge correction) 1: SC1 (no end edge correction) 2: SC2 (no end edge correction) 3: T-MIC (end edge correction for Bk only) 4: SC2 (end edge correction for Bk only)
Reference	The setting made here is valid only for test printing.

15.7.1.1.4 <THRU>

T-15-369

	Use it to switch between image correction tables for text print output.
Setting	0: on (use) 1: off (do not use)

15.7.1.1.5 <DENS-Y,DENS-M,DENS-C,DENS-K>

T-15-370

	Use it to adjust the density of individual colors for text printing (TYPE=5).
Range of Settings	0 to 255: a higher setting darkens image

15.7.1.1.6 <COLOR-Y,COLOR-M,COLOR-C,COLOR-K>

T-15-371

	Use it to set output of individual colors for each TYPE; e.g., to generate M mono, set 'COLOR-M=1', and set '0' to all other colors.
Setting	0: do not generate 1: generate

15.7.1.1.7 <F/M-SW>

T-15-372

Use it to switch between full color and mono color for PG output.

Setting 0: full color output
1: mono color output

15.7.1.1.8 <PG-PICK>

T-15-373

Use it to select a source of paper for text print output.

Setting 1: cassette 1

2: cassette 2

3: cassette 3

4: cassette 4

5: side deck

6: manual feeder

7 and 8: not used

15.7.1.1.9 <2-SIDE>

T-15-374

Use it to set mode for text printing.

Setting 0: single-sided [at time of shipment/after RAM initialization]
1: double-sided

15.7.1.1.10 <PG-QTY>

T-15-375

	Use it to set a copy count for text printing.
Setting	1 to 999 [at time of shipment/after RAM initialization: 1]

15.7.1.2 NETWORK

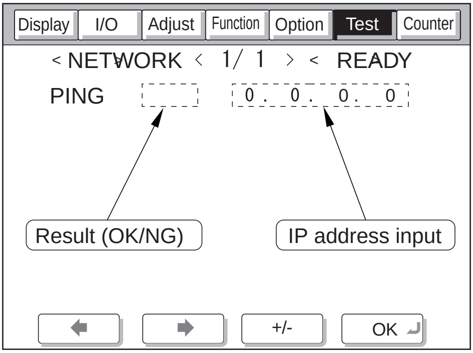
15.7.1.2.1 <Outline>

Checking Network-Related Connections

15.7.1.2.2 <PING>

T-15-376

	Use it to check the connection of the machine to a network (only if TCP/IP).
Caution	Use it when checking the connection to the network at time of installation if a fault occurs in the connection to the network.



< NETWORK < 1/ 1 > < READY

PING 0 . 0 . 0 . 0

F-15-23

T-15-377

Method of operation	1) Turn off the main power switch.
	2) Connect the network cable to the machine and turn on the main power switch.
	3) Inform the user's system administrator that the installation work for the machine is over, and ask him/her to make necessary network settings.
	4) Advise the system administrator that you will be checking the network connection, and obtain the remote host address (IP address of a PC terminal on the user's network) for PING.
	5) Make the following selections in service mode: COPIER>TEST>NETWORK>PING. Then, using the keypad on the control panel, enter the IP address you obtained in step 4), and press the OK key and then the Start key.
	- The machine will indicate 'OK' if the connection to the network is correct. (end of work)
	- If the machine indicates 'NG', check the connection of the network cable; if it is normal, go to step 6). If a fault has been found in the connection of the network cable, correct it, and go back to step 5).

6) Make the following selections in service mode: COPIER>TEST>NETWORK>PING. Then, enter the loopback address* (127.0.0.1), and press the OK key and then the Start key.

- If the machine indicates 'NG', suspect a fault in the TCP/IP settings of the machine; go back to step 3), and check the settings.

- If the machine indicates 'OK', the TCP/IP settings of the machine are likely to be correct. Suspect, on the other hand, a fault in the connection of the network interface board (NIC) or the board itself. Go on to step 7).

* A loopback address will return before it reaches the NIC, offering a means to check the TCP/IP settings of the machine itself.

7) Make the following selections in service mode: COPIER>TEST>NETWORK>PING. Then, enter the local host address (IP address of the machine), and press the OK key.

- If the machine indicates 'NG', suspect a fault in the connection of the NIC or the NIC itself. Check its connection, or replace it as necessary.

- If the machine indicates 'OK', the network settings of the machine and the NIC are likely to be correct. Suspect a fault in the user's network environment; ask the system administrator for corrective action.

15.8 COUNTER （Counter Mode）

15.8.1 COPIER

15.8.1.1 TOTAL

15.8.1.1.1 <Overview>

Total Counter

15.8.1.1.2 <SERVICE1>

Total Counter 1 for Service Work
It increases its count when paper is delivered outside the printer unit.
(It increases its count regardless of the size of paper, large or small.)
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.1.3 <SERVICE2>

Total Counter 2 for Service Work
It increases its count when paper is delivered outside the printer unit.
(It increases its count by 2 if the paper is large size and by 1 if the paper is small size.)
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.1.4 <COPY>

Total Copy Counter

It increases its count when copying operation has been executed and paper is delivered outside the printer.

When the count exceeds '99999999', it returns to '00000000'.

15.8.1.1.5 <PDL-PRT>

PDL Print Counter

It increases its count when paper is delivered outside the machine or stacked for duplexing in keeping with the charge counter when in PDL print mode.

It does not increase its count in the case of blank paper. It increases its count by 1 for large and small sheets alike.

When the count exceeds '99999999', it returns to '00000000'.

15.8.1.1.6 <FAX-PRT>

Fax Reception Print Counter

It increases its count when paper is delivered outside the machine or stacked for duplexing to suit the charge counter in fax reception mode.

It does not increase its count in the case of blank paper. It increases its count by 1 for large and small sheets alike. Its count may be reset.

When the count exceeds '99999999', it returns to '00000000'.

15.8.1.1.7 <RMT-PRT>

Remote Print Counter

It increases its count when paper is delivered outside the machine or stacked for duplexing in keeping with the charge counter in remote print mode.

It does not increase its count in the case of blank paper. It increases its count by 1 for large and small sheets alike. Its count may be reset.

When the count exceeds '99999999', it returns to '00000000'.

15.8.1.1.8 <BOX-PRT>

Box Print Counter
It increases its count when paper is delivered outside the machine or stacked for duplexing in keeping with the charge counter in box print mode.
It does not increase its count in the case of blank paper. It increases its count by 1 for large and small sheets alike. Its count may be reset.
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.1.9 <RPT-PRT>

Report Print Counter
It increases its count when paper is delivered outside the machine or stacked for duplexing in keeping with the charge counter in report print mode.
It does not increase its count in the case of blank paper. It increases its count by 1 for large and small sheets alike. Its count may be reset.
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.1.10 <2-SIDE>

Double-Sided Copy/Print Counter
It increases its count when paper is delivered outside the machine or stacked for duplexing in keeping with the charge counter, indicating the number of double-sided copies/prints.
It does not increase its count in the case of blank paper. It increases its count by 1 for large and small sheets alike. Its count may be reset.
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.1.11 <SCAN>

Scan Counter
It increases its count at the end of reading operation, indicating the number of scans.
It increases its count by 1 for large and small sheets alike. It may be initialized.
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.2 PICK-UP

15.8.1.2.1 <Outline>

Pickup-Related Counters

15.8.1.2.2 <C1>

Cassette 1 Pickup Total Counter
It indicates the number of sheets picked up from the cassette 1.
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.2.3 <C2>

Cassette 2 Pickup Total Counter
It indicates the number of sheets picked up from the cassette 2.
When the count exceeds '99999999' it returns to '00000000'.

15.8.1.2.4 <C3>

Cassette 3 Pickup Total Counter
It indicates the number of sheets picked up from the cassette 3 (upper cassette of the cassette pedestal).
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.2.5 <C4>

Cassette 4 Pickup Total Counter
It indicates the number of sheets picked up from the cassette 4 (lower cassette of the cassette pedestal).
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.2.6 <MF>

Manual Feed Pickup Total Counter
It indicates the number of sheets picked up from the manual feed pickup unit.
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.2.7 <DK>

Deck Pickup Total Counter
It indicates the number of sheets picked up from the deck pickup unit.
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.2.8 <2-SIDE>

Duplex Pickup Total Counter
It indicates the number of sheets used for duplexing.
When the count exceeds '99999999', it returns to '00000000'.

15.8.1.3 FEEDER

15.8.1.3.1 <Overview>

DADF-Related Counters

15.8.1.3.2 <FEED>

total counter indicating the number of originals picked up by the ADF

15.8.1.4 JAM

15.8.1.4.1 <Overview>

Jam-Related Counters

15.8.1.4.2 <TOTAL>

copier total jam counter

15.8.1.4.3 <FEEDER>

feeder total jam counter

15.8.1.4.4 <SORTER>

finisher total jam counter

15.8.1.4.5 <2-SIDE>

duplex unit jam counter

15.8.1.4.6 <MF>

manual feed pickup jam counter

15.8.1.4.7 <C1>

cassette 1 jam counter

15.8.1.4.8 <C2>

cassette 2 jam counter

15.8.1.4.9 <C3>

cassette 3 jam counter

15.8.1.4.10 <C4>

cassette 4 jam counter

15.8.1.4.11 <DK>

side paper deck jam counter

15.8.1.5 MISC

15.8.1.5.1 <Overview>

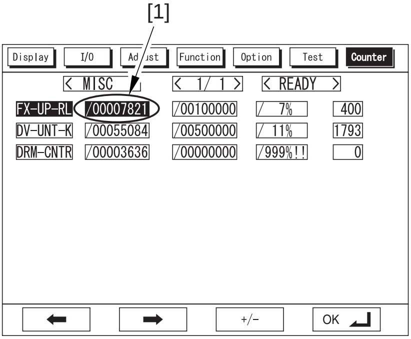
15.8.1.5.2 <FX-UP-RL>

T-15-378

	It indicates the number of sheets that have moved past the fixing roller. (The count is retained by the DC controller PCB.)
Method of operation	Be sure to reset the reading if you have replaced the fixing roller. If you have replaced the DC controller PCB, be sure to enter the reading recorded before the replacement.

MEMO: Entering the Initianl Reading

Highlight the counter reading [1], and type in the initial reading (from before the replacement work).



```
FX-UP-RL   /00007821  /00100000  /  7%      400
DV-UNT-K   /00055084  /00500000  / 11%     1793
DRM-CNTR   /00003636  /00000000  /999%!!      0
```

F-15-24

15.8.1.5.3 <DV-UNT-K>

T-15-379

	It indicates the number of sheets that have moved past through the developing unit.
Method of operation	- If you have replaced the developing unit (Bk), initialize the reading. - If you have replaced the DC controller PCB, enter the reading recorded before the replacement.
Caution	Do not reset the reading or enter a new reading unless if you have done the foregoing. Otherwise, the machine may have to operate on incorrect image density, producing foggy output or damaging the drum (by carrier particles), requiring you to replace the developing unit (Bk), and initialize the reading.
Reference	The machine's ATR control consists in the correction of the toner supply amount based on the target density and the patch image density it measures at specific times. It corrects the target density for individual colors, and it makes correction for Bk based on the cumulative number of images made (i.e., the reading discussed herein).

15.8.1.5.4 <DRM-CNTR>

T-15-380

	number of sheets of paper moving past the drum (counter reading held by the DC controller PCB)
Method of operation	If you have replaced the DC controller PCB, enter the setting of the item you recorded before the replacement.
Caution	Do not reset or change any settings other than the setting in question.
Reference	This counter automatically reset to '0' when the following service mode item is executed after replacement of the drum until COPIER > FUNCTION > CLEAR > DRM-LIFE.

15.8.1.6 DRBL-1

15.8.1.6.1 <Overview>

Counters Used to Indicate the Use of the Machine's Durables

15.8.1.6.2 <LSR-DRV>

It indicates the number of sheets in relation to the number of times the laser has been turned on.

15.8.1.6.3 <LSR-MTR>

It indicates the number of times the scanner motor has been turned on.

15.8.1.6.4 <T-CLN-BD>

It indicates the number of sheets that have moved past through the transfer cleaning unit. (The count is held by the controller.)

15.8.1.6.5 <TR-BLT>

It indicates the number of sheets that have moved past the intermediate transfer belt. (The count is held by the controller.)

15.8.1.6.6 <TR-ROLL>

It indicates the number of sheets that have moved past the secondary transfer outside roller. (The count is held by the controller.)

15.8.1.6.7 <2TR-ROLL>

It indicates the number of times the secondary transfer outside roller has been turned on. (The count is held by the controller.)

15.8.1.6.8 <2TR-CL>

It indicates the number of sheets that have moved past the secondary transfer clutch. (The count is held by the controller.)

15.8.1.6.9 <ITB-CL>

It indicates the number of sheets that have moved past the ITB cleaning clutch. (The count is held by the controller.)

15.8.1.6.10 <EL-NDL>

It indicates the number of sheets that have moved past the separation static eliminator. (The count is held by the controller.)

15.8.1.6.11 <DV-UNT-C>

It indicates the number of times the developing assembly has rotated.

15.8.1.6.12 <DV-UNT-Y>

It indicates the number of times the Y developing assembly has rotated.

15.8.1.6.13 <DV-UNT-M>

It indicates the number of times the M developing assembly has rotated.

15.8.1.6.14 <C1-PU-RL>

It indicates the number of sheets that have moved past through the cassette 1 pickup roller. (The count is held by the controller.)

15.8.1.6.15 <C2-PU-RL>

It indicates the number of sheets that have moved past the cassette 2 pickup roller. (The count is held by the controller.)

15.8.1.6.16 <M-PU-RL>

It indicates the number of sheets that have moved past the manual feed roller. (The count is held by the controller.)

15.8.1.6.17 <FX-LW-RL>

It indicates the number of sheets that have moved past the fixing roller. (The count is held by the controller.)

15.8.1.6.18 <FX-UNIT>

It indicates the number of sheets that have moved past the fixing unit. (The count is held by the controller.)

15.8.1.6.19 <FX-UP-FR>

It indicates the number of sheets that have moved past the fixing upper frame unit. (The count is held by the controller.)

15.8.1.7 DRBL-2

15.8.1.7.1 <Overview>

Counter Used to Indicate the Use of Durables of Accessories

15.8.1.7.2 <DF-PU-RL>

It indicates the number of sheets that have moved past the ADF pickup roller.

15.8.1.7.3 <DF-SP-PD>

It indicates the number of sheets that have moved past the ADF separation pad.

15.8.1.7.4 <DF-FD-RL>

It indicates the number of sheets that have moved past the DF feed roller.
It increases its count by 1 for a single-sided original.
It increases its count by 3 for a double-sided original.

15.8.1.7.5 <LNT-TAPE>

It indicates the number of times the DF dust-collecting tape has been moved. (increase of 1 per original)

15.8.1.7.6 <PD-PU-RL>

It indicates the number of sheets that have moved past the paper deck pickup roller.

15.8.1.7.7 <C3-PU-RL>

It indicates the number of sheets that have moved past the cassette 3 pickup roller.

15.8.1.7.8 <C4-PU-RL>

It indicates the number of sheets that have moved past the cassette 4 pickup roller.

15.8.1.7.9 <SORT>

It indicates the number of sheets that have moved past the sort path. (increase of 1 also for large size)

15.8.1.7.10 <FIN-STPR>

It indicates the number of stapling operations of the stacker assembly.

15.8.1.7.11 <SADDLE>

It indicates the number of sheets that have moved past the saddle assembly.

15.8.1.7.12 <SDL-STPL>

It indicates the number of stapler operations in the saddle assembly.

15.8.1.7.13 <PUNCH>

It indicates the number of punching operations.

15.8.1.7.14 <PNCH-HRS>

It indicates the number of puncher swing operations.

15.8.1.7.15 <FN-BFFRL>

It indicates the number sheets that have moved past the buffer roller.

15.8.1.7.16 <TY-TQLMT>

It indicates the number of tray switching operations.

15.8.2 FEEDER

15.8.2.1 <Overview>

DADF-Related Counter

15.8.2.2 <FEED>

It is a total counter used to indicate the number of originals picked up by the ADF.

Chapter 16 Upgrading

Contents

16.1 Outline..16-1

  16.1.1 Outline of the Version Upgrade 16-1

  16.1.2 Outline of the Service Support Tool 16-1

  16.1.3 Network Interface of the Machine with the SST in Use 16-4

16.2 Making Preparations 16-10

  16.2.1 Registering the System software..16-10

  16.2.2 Making connections 16-16

16.3 Formatting the HDD 16-26

  16.3.1 Formatting All Partitions...16-26

  16.3.2 Formatting Selected Partitions 16-27

  16.3.3 Formatting Procedure...16-28

16.4 Downloading System Software...16-41

  16.4.1 Downloading the System Software...16-41

    16.4.1.1 Outline...16-41

    16.4.1.2 Downloading Procedure...16-42

  16.4.2 Downloading the RUI, and Language Module 16-52

    16.4.2.1 Outline...16-52

    16.4.2.2 Downloading Procedure...16-54

  16.4.3 Downloading the BOOT Software..16-64

    16.4.3.1 Outline...16-64

    16.4.3.2 Downloading Procedure 16-66

  16.4.4 Downloading the Dcon and Rcon Software..................................16-76

    16.4.4.1 Outline...16-76

    16.4.4.2 Downloading Procedure...16-77

  16.4.5 Downloading the G3 FAX Software...16-88

    16.4.5.1 Outline...16-88

    16.4.5.2 Downloading Procedure...16-89

16.5 Uploading and Downloading Backup Data.......................................16-100

  16.5.1 Outline...16-100

  16.5.2 Uploading Procedure 16-101

  16.5.3 Downloading Procedure 16-111

16.1 Outline

16.1.1 Outline of the Version Upgrade

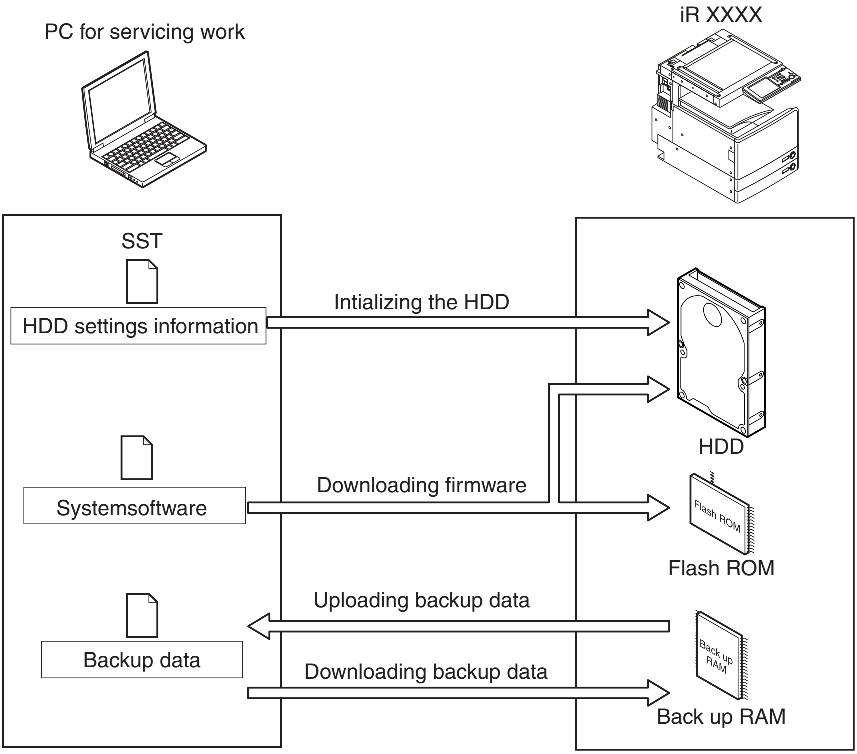
The version upgrade of this machine and the accessories can be done by downloading from a personal computer (PC) in which the service support tool (SST) is installed or by replacing DIMM-ROM. The table below shows a list of firmware and the associated way of upgrading.

T-16-1

	Firmware	Way of Version Upgrade		Notes
		SST	ROM-DIMM replacement	
Main Body	System (system software)	Yes	No	
	Language (language module)	Yes	No	
	RUI (remote UI)	Yes	No	
	Boot (boot program)	Yes	Yes	
	DCON (DC controller)	Yes	No	
	RCON (reader controller)	Yes	No	It also controls ADF reading.
Accessory	G3FAX (super G3FAX board-N1)	Yes	Yes	
	Fin_P1 (Finisher-P1)	Yes	No	The special service tool (Downloader PCB: FY9-2034) is necessary.
	Fin_QR (Finisher-Q1/ Saddle Finisher-Q2)	Yes	No	

16.1.2 Outline of the Service Support Tool

The service supporrt tool (SST, hereafter) provides the following functions:


PC for servicing work
iR XXXX
SST
HDD settings information
Intializing the HDD
Systemsoftware
Downloading firmware
HDD
Flash ROM
Flash ROM
Uploading backup data
Backup data
Downloading backup data
Back up RAM
Back up RAM

F-16-1

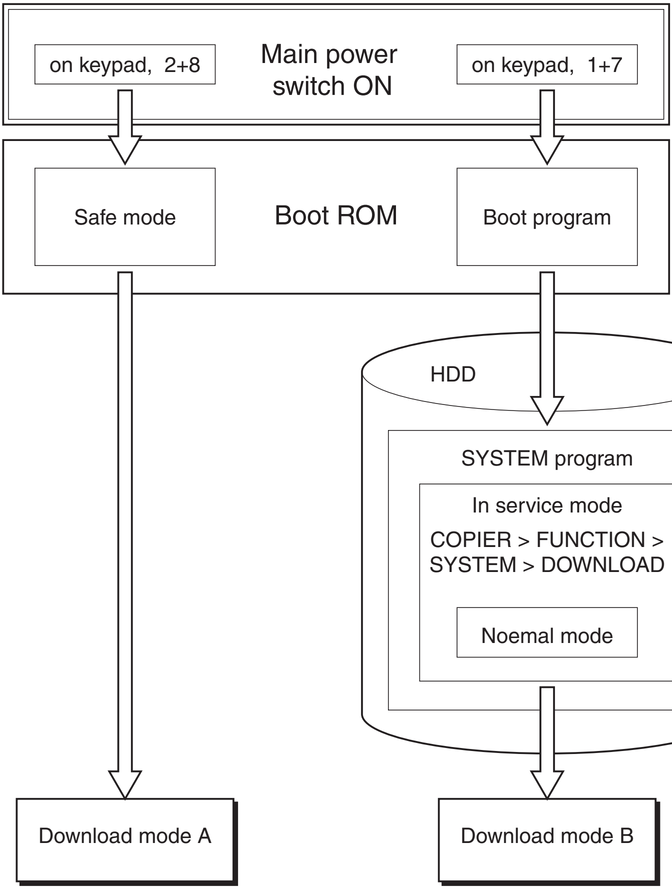
To use the SST, you must first set the machine to download mode.
The machine's download mode consists of 2 types.

-**Normal Mode(Download mode B)**

(With pressing 1+7, turn on the main power switch and select service mode: COPIER> FUNCTION> SYSTEM> DOWNLOAD.)

-**Safe Mode(Download mode A)**

(With pressing 2+8, turn on the main power switch.)


on keypad, 2+8
Main power switch ON
on keypad, 1+7
Safe mode
Boot ROM
Boot program
HDD
SYSTEM program
In service mode
COPIER > FUNCTION > SYSTEM > DOWNLOAD
Noemal mode
Download mode A
Download mode B

F-16-2

⚠

Use safe mode for the following:
-after replacing the HDD.
-if the system fails to operate normally.

The following shows combinations of functions that may be used in association with the SST and the download mode:

T-16-2

Function	**Download mode**	
	Normal mode (download mode B)	**Safe mode (download mode A)**
Formatting the HDD	-	ALL
	-	BOOTDEV
	DOSDEV	-
	FSTDEV	-
	DOSDEV2	-
	FSTPDEV	-
	DOSDEV3	-
	PDLDEV	-
	DOSDEV4	-
	DOSDEV5	-
Downloading system software	-System	-System
	-Language	-Language
	-RUI	-RUI
	-Boot	-Boot
	-G3FAX	-
	-Dcon	-
	-Rcon	-
Downloading/ Uploading back up data	-DconSRAM	-
	-RconSRAM	-

16.1.3 Network Interface of the Machine with the SST in Use

The machine communicates with the SST using the Ethernet protocol(TCP/IP).
The machine offers 2 sets of network settings:

-user enviroment network settings

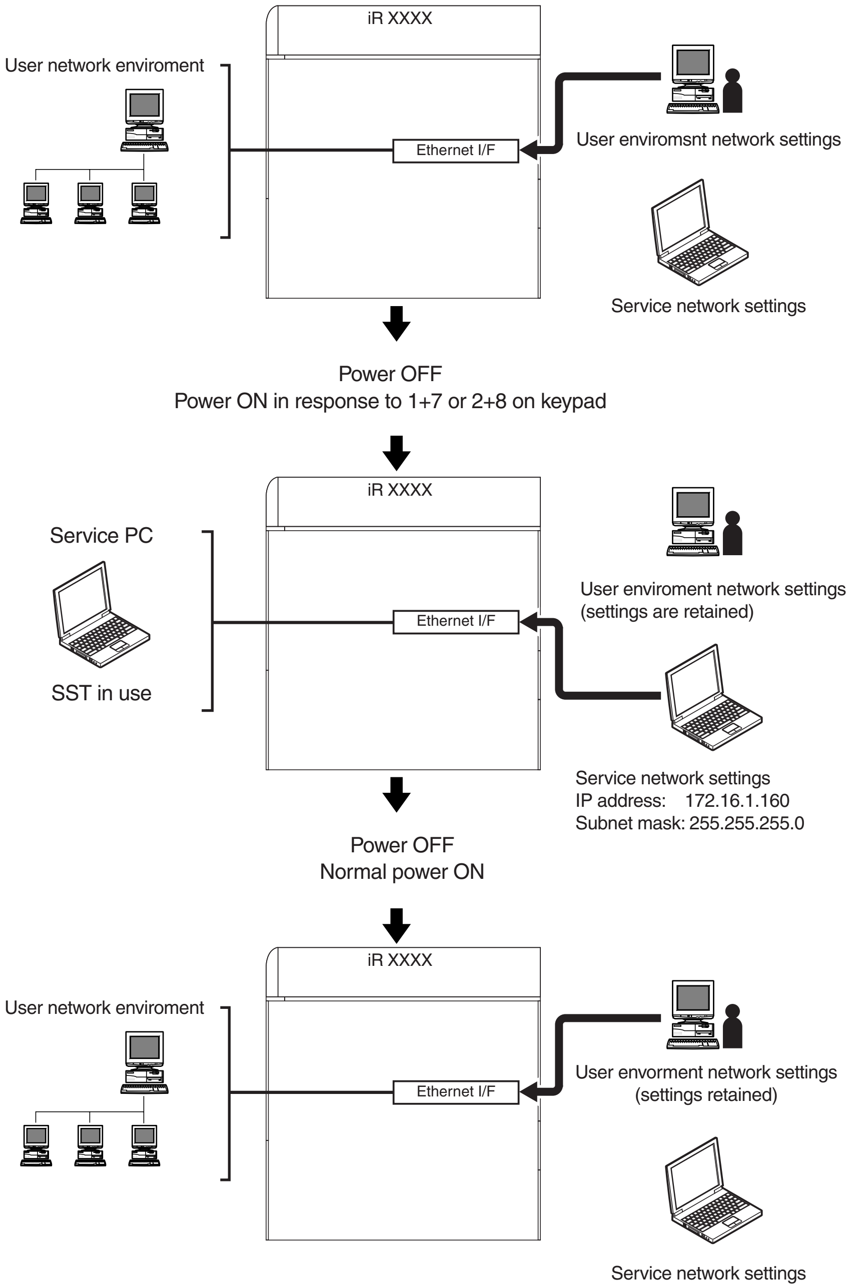
(Additional Function> system contorol settings> network settings)

-service network settings

(IP address: 172.16.1.160
Subnet mask: 255.255.255.0)

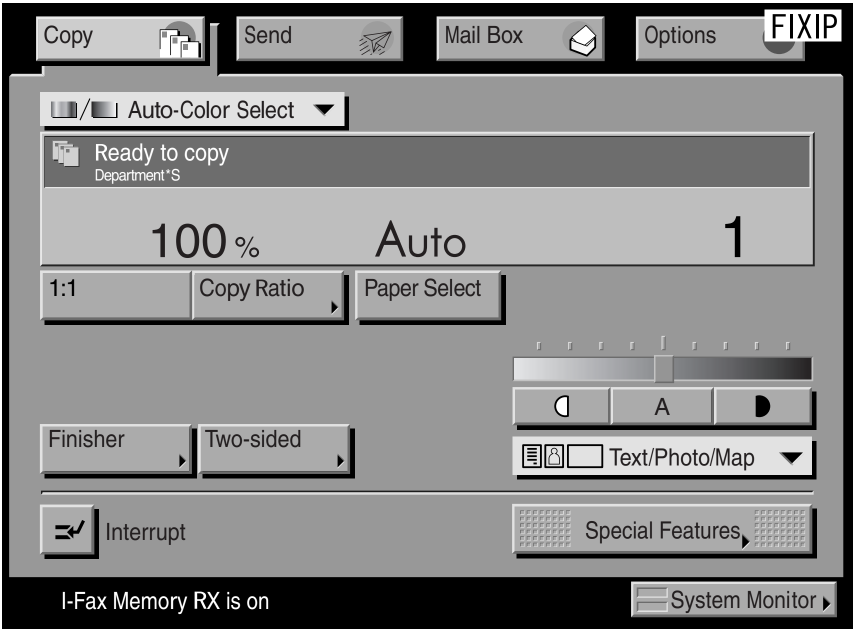
The netework settings are dependent on how the machine is started up.
The user enviroment settings are retained while the service settings are selected.

⚠You need not change the user enviroment network settings before or after the SST.


iR XXXX
User network enviroment
Ethernet I/F
User enviromsnt network settings
Service network settings
Power OFF
Power ON in response to 1+7 or 2+8 on keypad
iR XXXX
Service PC
SST in use
Ethernet I/F
User enviroment network settings
(settings are retained)
Service network settings
IP address: 172.16.1.160
Subnet mask: 255.255.255.0
Power OFF
Normal power ON
iR XXXX
User network enviroment
Ethernet I/F
User envorment network settings
(settings retained)
Service network settings

F-16-3

If you start up the machine by pressing 1+7, the machine indicates **'FIXIP'** in the upper right of the LCD to distinguish its state from normal.


Copy
Send
Mail Box
Options
FIXIP
Auto-Color Select
Ready to copy
Department*S
100 %
Auto
1
1:1
Copy Ratio
Paper Select
A
Finisher
Two-sided
Text/Photo/Map
Interrupt
Special Features
I-Fax Memory RX is on
System Monitor

F-16-4

⚠

Attension when installed option board

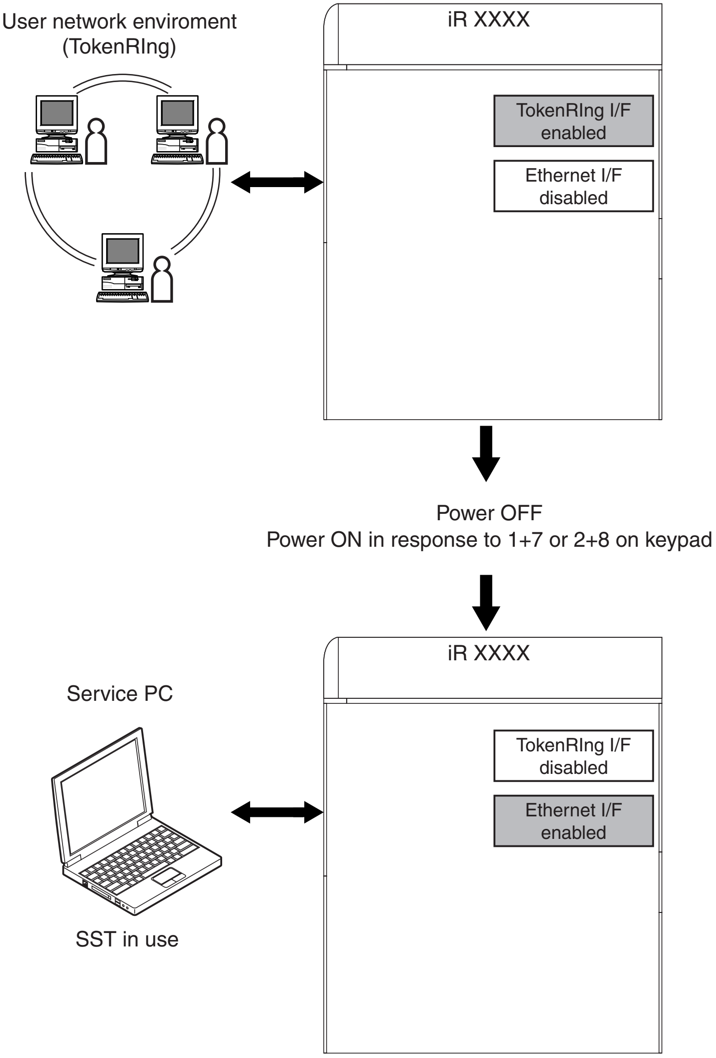
-Normal Power ON

The Ethernet interface is disabled if a TokenRing board is installed.

-Power ON in response to 1+7 or 2+8

The Ethernet interface is enabled if a TokenRing board is installed, and the TokenRing board is disabled.

You need not remove the TokenRing board when connecting the SST.


User network enviroment
(TokenRIng)
iR XXXX
TokenRIng I/F
enabled
Ethernet I/F
disabled
Power OFF
Power ON in response to 1+7 or 2+8 on keypad
iR XXXX
Service PC
TokenRIng I/F
disabled
Ethernet I/F
enabled
SST in use

F-16-5

16.2 Making Preparations

16.2.1 Registering the System software

Register the System software stored on the system CD to the SST.

[Before starting the work]

Keep the following on hand:

-PC to which SST v1.73 or later has been installed.

-system CD for iRC3100

(if the machine supports the Netware, prepare the system CD for iRC3100N)

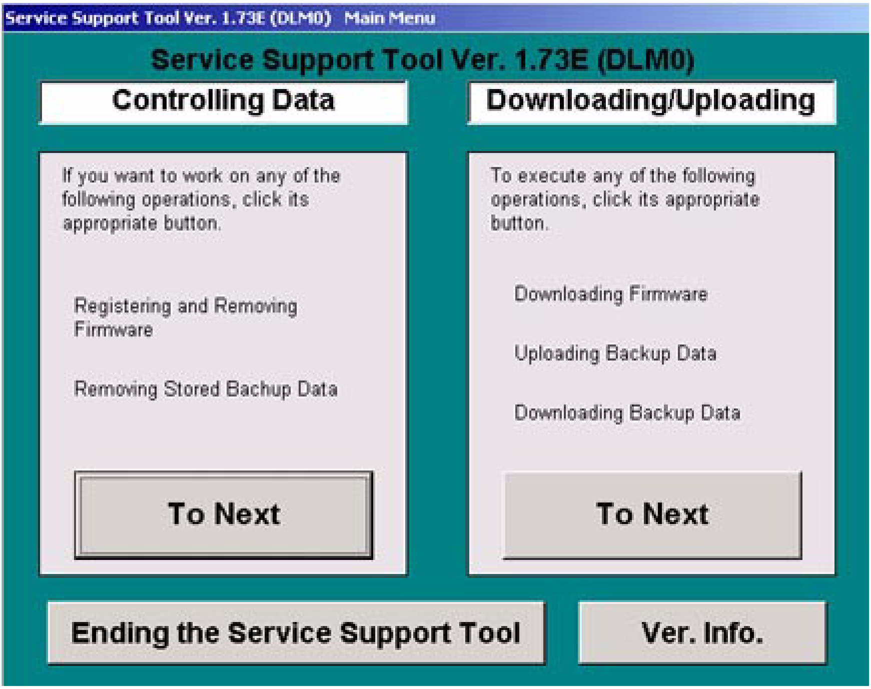
[Registering the System software]

1) Start up the PC.

2) Set the system CD to the PC.

3) Start up the SST.

4) Click [next] under Controlling Data.



Service Support Tool Ver. 1.73E (DLM0) Main Menu

Service Support Tool Ver. 1.73E (DLM0)

Controlling Data

If you want to work on any of the following operations, click its appropriate button.

Registering and Removing Firmware

Removing Stored Bachup Data

Downloading/Uploading

To execute any of the following operations, click its appropriate button.

Downloading Firmware

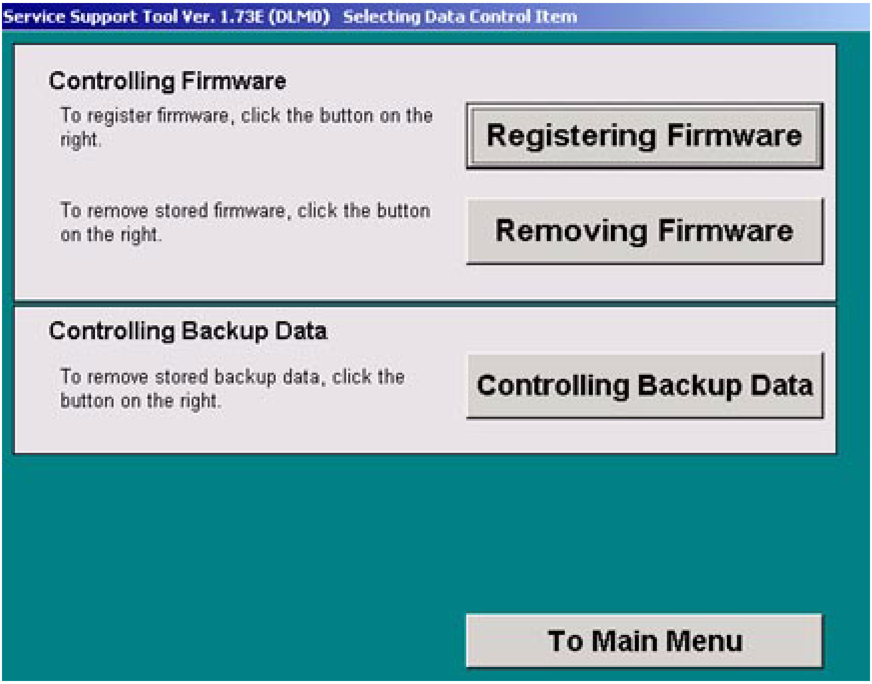
Uploading Backup Data

Downloading Backup Data

To Next
To Next
Ending the Service Support Tool
Ver. Info.

F-16-6

5) Click [Registering Firmware].



Service Support Tool Ver. 1.73E (DLM0) Selecting Data Control Item

Controlling Firmware

To register firmware, click the button on the right.

Registering Firmware

To remove stored firmware, click the button on the right.

Removing Firmware

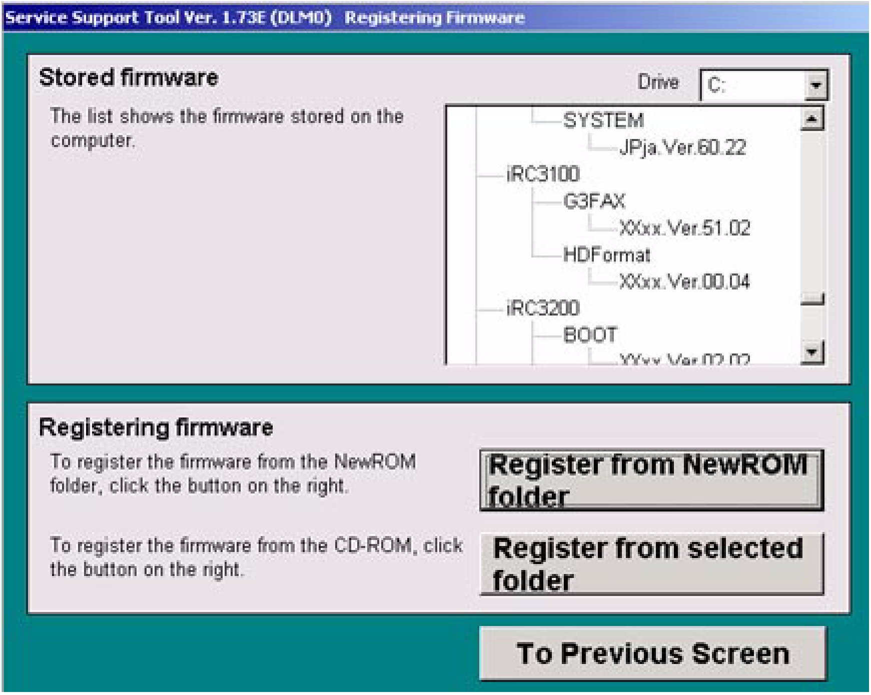
Controlling Backup Data

To remove stored backup data, click the button on the right.

Controlling Backup Data
To Main Menu

F-16-7

6) Click [Register from selected folder].


Service Support Tool Ver. 1.73E (DLM0) Registering Firmware
Drive
C:
SYSTEM
JPja.Ver.60.22
iRC3100
G3FAX
XXxx.Ver.51.02
HDFormat
XXxx.Ver.00.04
iRC3200
BOOT
XXxx.Ver.02.02
Register from NewROM folder
Register from selected folder
To Previous Screen

Stored firmware

The list shows the firmware stored on the computer.

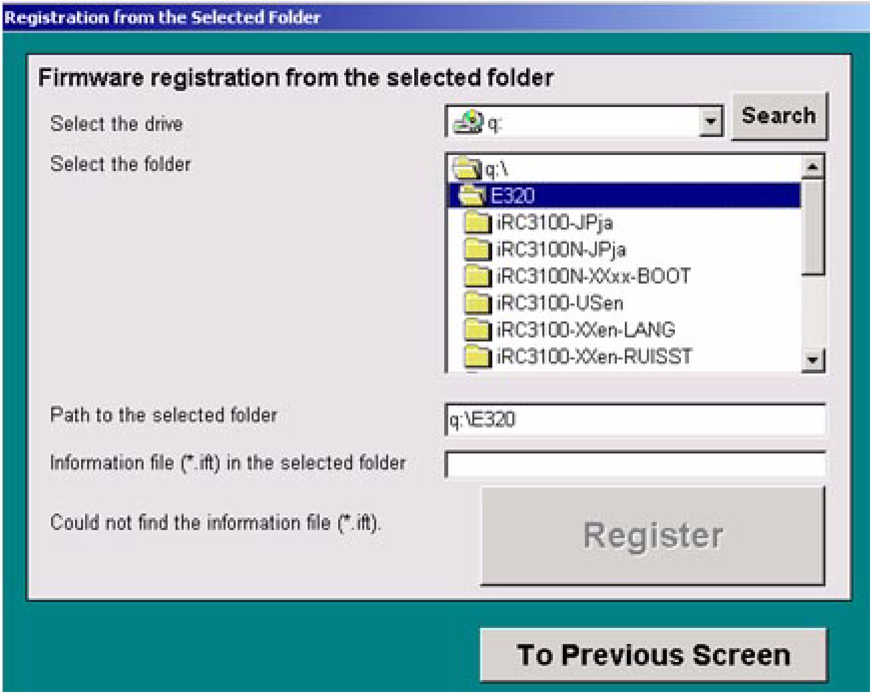
Registering firmware

To register the firmware from the NewROM folder, click the button on the right.

To register the firmware from the CD-ROM, click the button on the right.

F-16-8

7) Select the drive in which you have set the system CD, and click [Search].



Registration from the Selected Folder

Firmware registration from the selected folder

Select the drive: q:

Select the folder:
- q:\
- E320
- iRC3100-JPja
- iRC3100N-JPja
- iRC3100N-XXxx-BOOT
- iRC3100-USen
- iRC3100-XXen-LANG
- iRC3100-XXen-RUISST

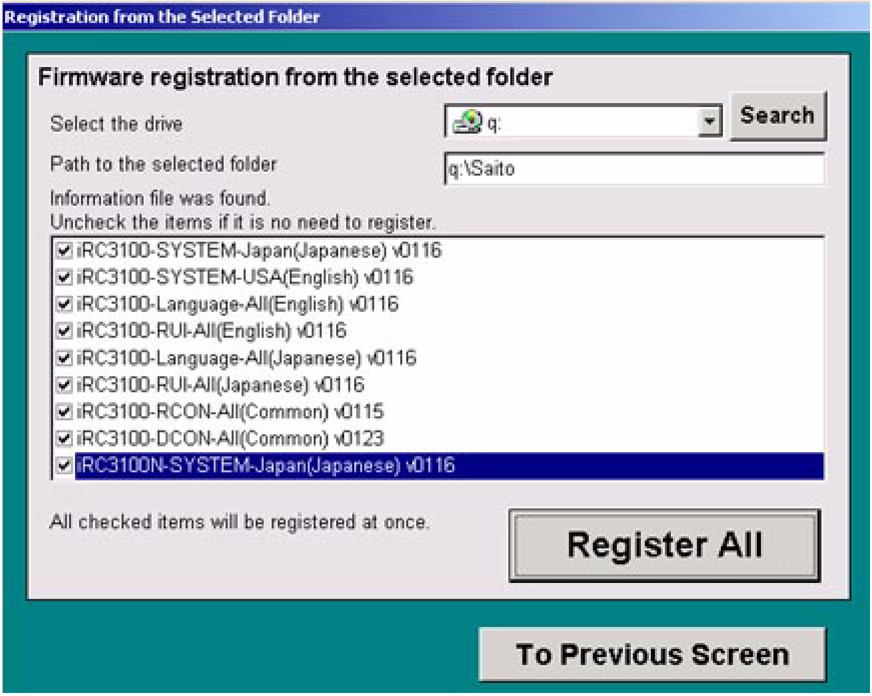
Path to the selected folder: q:\E320

Information file (*.ift) in the selected folder:

Could not find the information file (*.ift).

F-16-9

8) When the list of system software items contained on the system CD has appeared, click [Register All] after it becomes enabled.



Registration from the Selected Folder

Firmware registration from the selected folder

Select the drive: q:

Path to the selected folder: q:\Saito

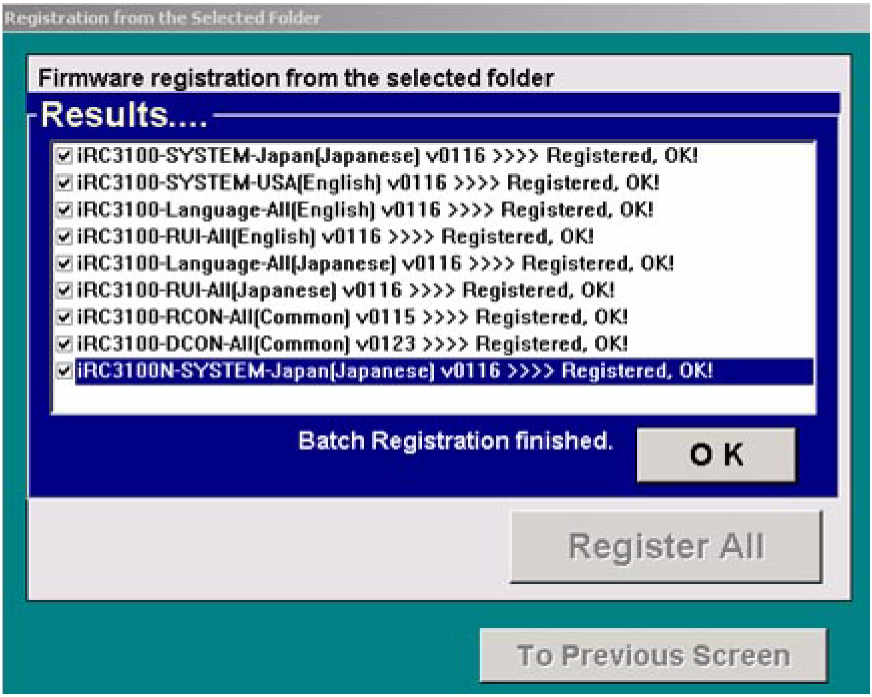
Information file was found.
Uncheck the items if it is no need to register.

- ☑ iRC3100-SYSTEM-Japan(Japanese) v0116
- ☑ iRC3100-SYSTEM-USA(English) v0116
- ☑ iRC3100-Language-All(English) v0116
- ☑ iRC3100-RUI-All(English) v0116
- ☑ iRC3100-Language-All(Japanese) v0116
- ☑ iRC3100-RUI-All(Japanese) v0116
- ☑ iRC3100-RCON-All(Common) v0115
- ☑ iRC3100-DCON-All(Common) v0123
- ☑ iRC3100N-SYSTEM-Japan(Japanese) v0116

All checked items will be registered at once.

F-16-10

9) When the result of the registration have appeared, click [OK].


Registration from the Selected Folder
Firmware registration from the selected folder
Results....

☑ iRC3100-SYSTEM-Japan[Japanese] v0116 >>>> Registered, OK!
☑ iRC3100-SYSTEM-USA[English] v0116 >>>> Registered, OK!
☑ iRC3100-Language-All[English] v0116 >>>> Registered, OK!
☑ iRC3100-RUI-All[English] v0116 >>>> Registered, OK!
☑ iRC3100-Language-All[Japanese] v0116 >>>> Registered, OK!
☑ iRC3100-RUI-All[Japanese] v0116 >>>> Registered, OK!
☑ iRC3100-RCON-All[Common] v0115 >>>> Registered, OK!
☑ iRC3100-DCON-All[Common] v0123 >>>> Registered, OK!
☑ iRC3100N-SYSTEM-Japan[Japanese] v0116 >>>> Registered, OK!

Batch Registration finished.

O K
Register All
To Previous Screen

F-16-11

16.2.2 Making connections

You will be connecting the PC to the machine.

[Before starting the work]
Keep the following on hand:
-PC to which SST v1.73 or later has been installed and iRC3100 system software has been registered.
-Twisted pair Cross cable
10BASE-T: category 3 or 5
100BASE-T: category 5

[Procedure]

1) Start up the PC.

2) Check the network settings of the PC.

-Type **'IPCONFIG'** to the command prompt, and press the Enter key.

-Check to see that the network settings are as follows:

IP address: 172.16.1.160

Subnet mask: 255.255.255.0

Default gateway: any

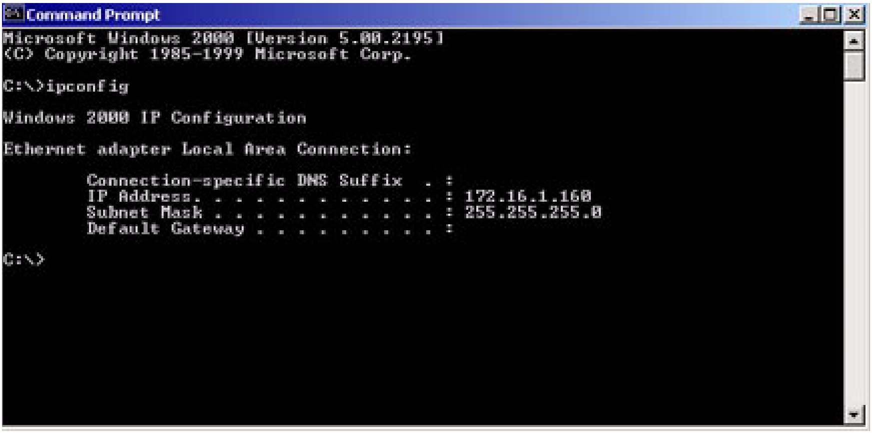
⚠Do not use the following settings.

-172.16.1.0

-172.16.1.100

-172.16.1.255

If the settings are not as indicatred, change the PC network settings:

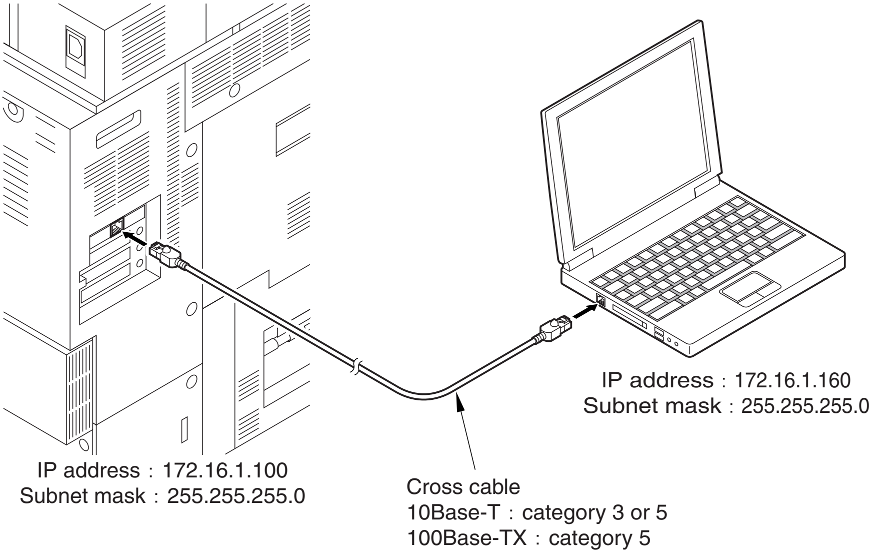


```
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

C:\>ipconfig

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection:

        Connection-specific DNS Suffix  . :
        IP Address. . . . . . . . . . . . : 172.16.1.160
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . :

C:\>
```

F-16-12

3) Check to see that the Execute/Memory lamp on the control panel is OFF; then, turn off the main power switch of the machine.

4) Connect the PC and the machine with a cross cable.


IP address : 172.16.1.160
Subnet mask : 255.255.255.0
IP address : 172.16.1.100
Subnet mask : 255.255.255.0
Cross cable
10Base-T : category 3 or 5
100Base-TX : category 5

F-16-13

5) While holding down the keys suited to the download mode you are going to use, turn on the main power switch of the machine.

-if Normal mode

Turn on the main power switch in response to 1+7 on keypad.

Enter sorce mode, make the following selection in service mode:

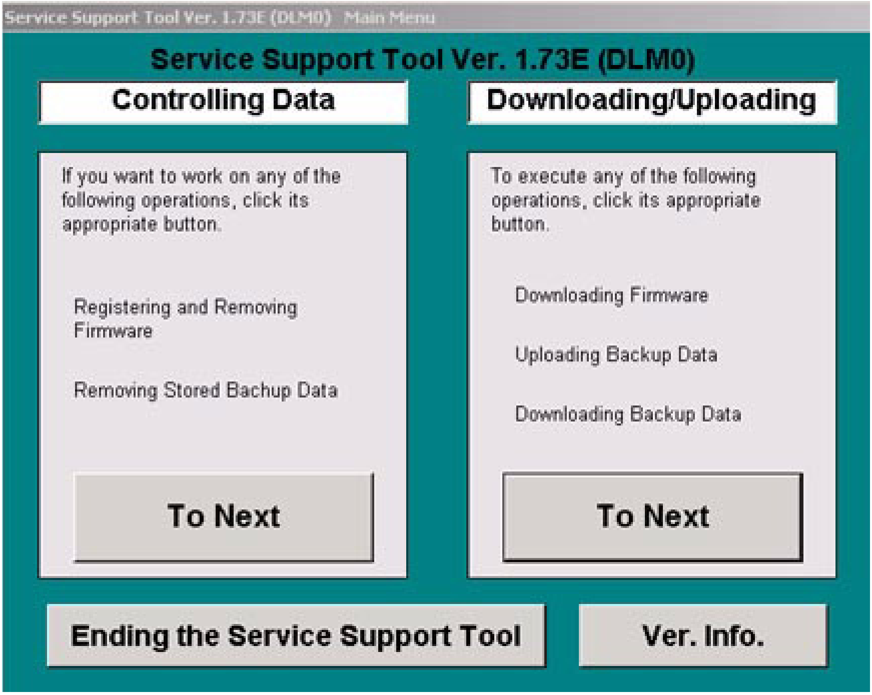
COPIER> FUNXTION> SYSTEM> DOWNLOAD

-if Safe mode

Turn on the main power switch in response to 2+8 on keypad.

6) Start up the SST.

7) Click [To next] under Downloading/Uploading.

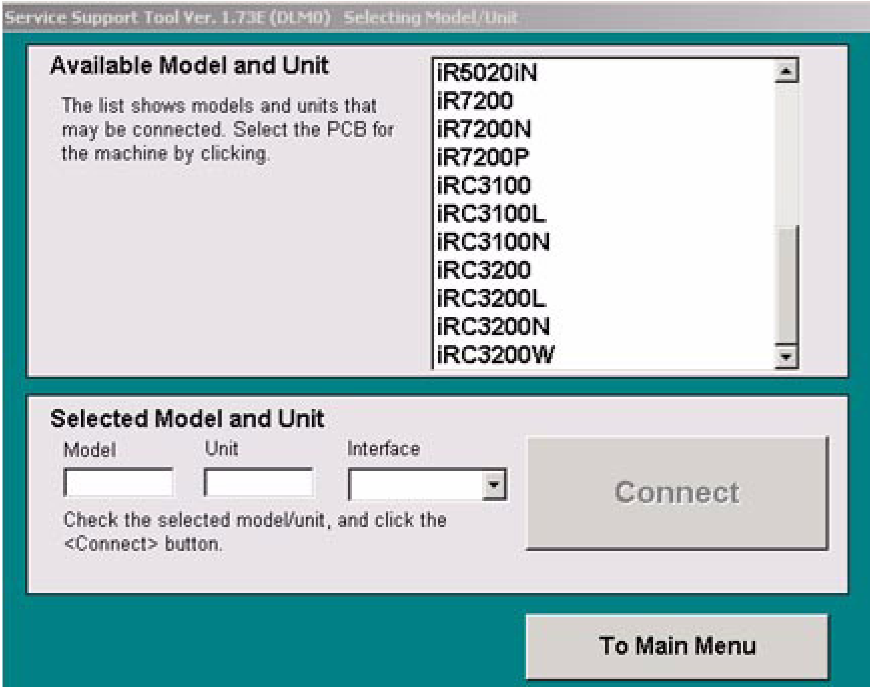

Service Support Tool Ver. 1.73E (DLM0) Main Menu
Service Support Tool Ver. 1.73E (DLM0)
Controlling Data
Downloading/Uploading
Registering and Removing Firmware
Removing Stored Bachup Data
Downloading Firmware
Uploading Backup Data
Downloading Backup Data
To Next
To Next
Ending the Service Support Tool
Ver. Info.

If you want to work on any of the following operations, click its appropriate button.

To execute any of the following operations, click its appropriate button.

F-16-14

8) Select the model of the machine.



Service Support Tool Ver. 1.73E (DLM0) Selecting Model/Unit

Available Model and Unit

The list shows models and units that may be connected. Select the PCB for the machine by clicking.

- iR5020iN
- iR7200
- iR7200N
- iR7200P
- iRC3100
- iRC3100L
- iRC3100N
- iRC3200
- iRC3200L
- iRC3200N
- iRC3200W

Selected Model and Unit

Model

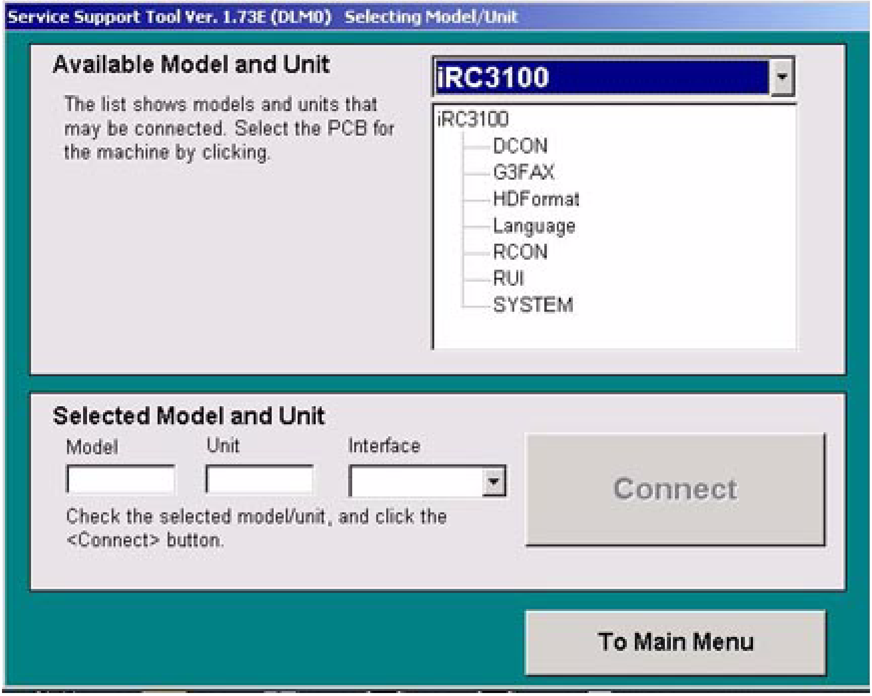
Unit

Interface

Check the selected model/unit, and click the <Connect> button.

F-16-15

9) Select the unit you want, and click [Connect].



Service Support Tool Ver. 1.73E (DLM0) Selecting Model/Unit

Available Model and Unit

The list shows models and units that may be connected. Select the PCB for the machine by clicking.

iRC3100
iRC3100
DCON
G3FAX
HDFormat
Language
RCON
RUI
SYSTEM

Selected Model and Unit

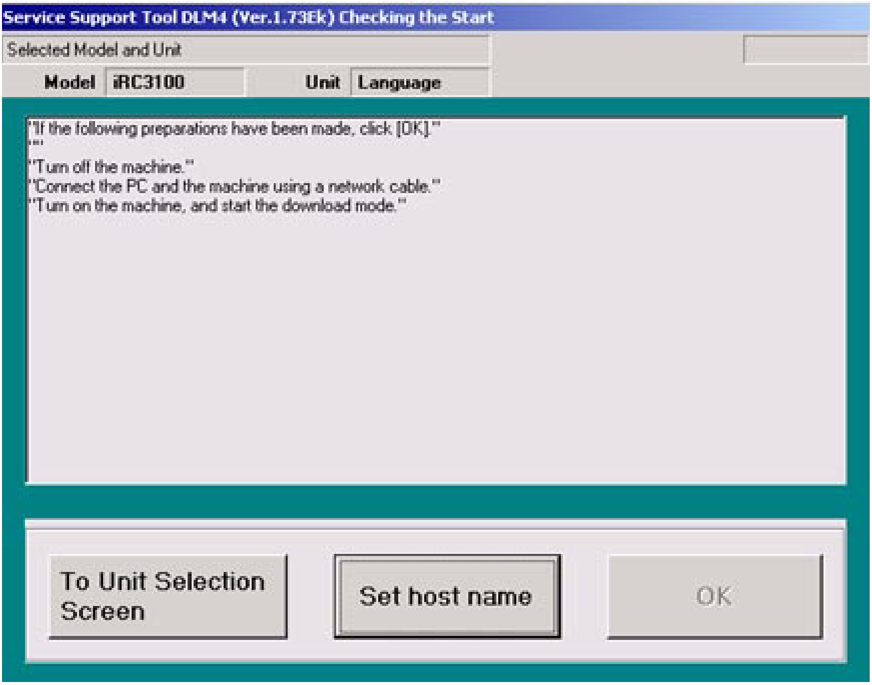
Model
Unit
Interface

Check the selected model/unit, and click the <Connect> button.

Connect
To Main Menu

F-16-16

10) Click [Set host name].


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Model
Unit
To Unit Selection Screen
Set host name
OK

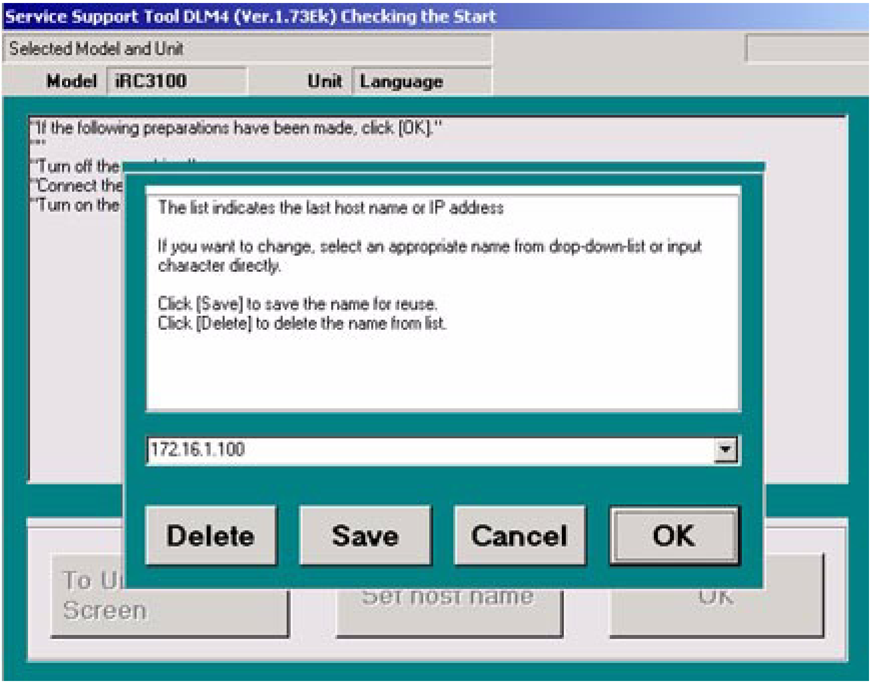
Model: iRC3100

Unit: Language

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-17

11) The machine's IP address is entered automatically; click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start

Selected Model and Unit

Model: iRC3100 Unit: Language

"If the following preparations have been made, click [OK]."

The list indicates the last host name or IP address

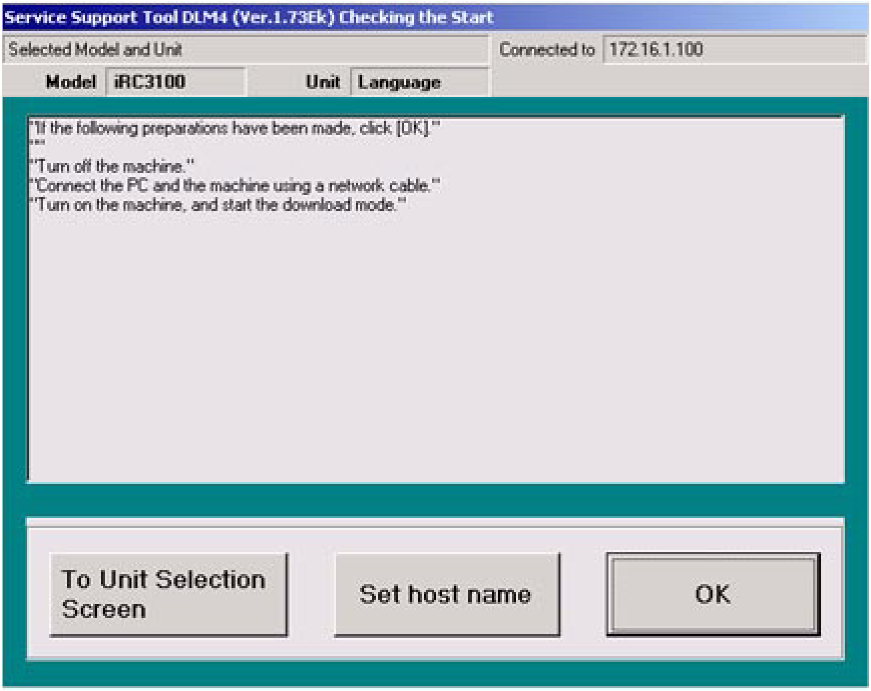
If you want to change, select an appropriate name from drop-down-list or input character directly.

Click [Save] to save the name for reuse.
Click [Delete] to delete the name from list.

172.16.1.100

F-16-18

12) Click [OK] so that the machine makes a connection.


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
To Unit Selection Screen
Set host name
OK

Connected to 172.16.1.100

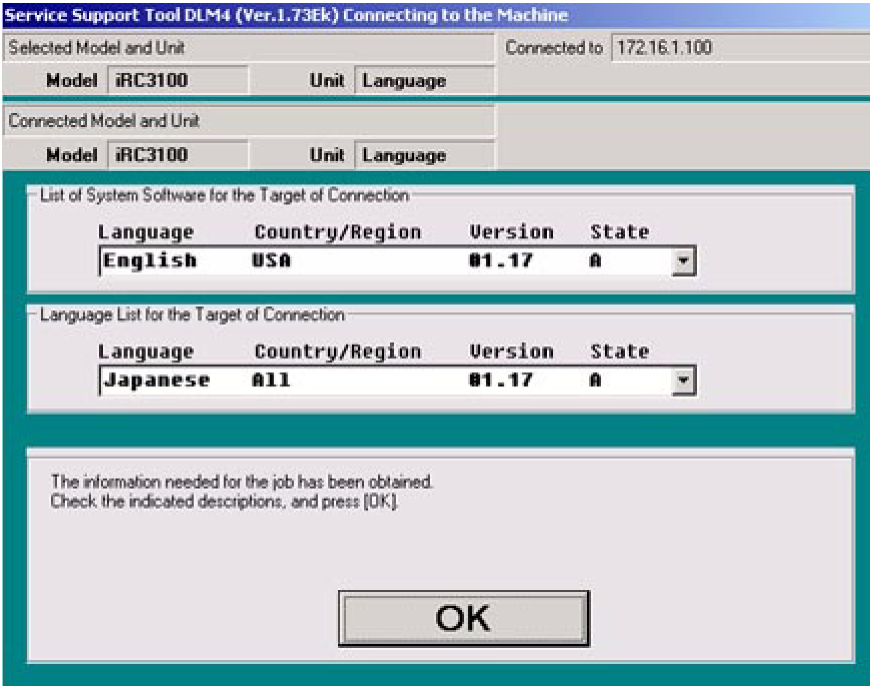
Model iRC3100

Unit Language

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-19

13) When the machine has made a connection and brings up the following screen, click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Connecting to the Machine

Selected Model and Unit

Connected to 172.16.1.100

Model iRC3100 Unit Language

Connected Model and Unit

Model iRC3100 Unit Language

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Language List for the Target of Connection

Language	Country/Region	Version	State
Japanese	All	01.17	A

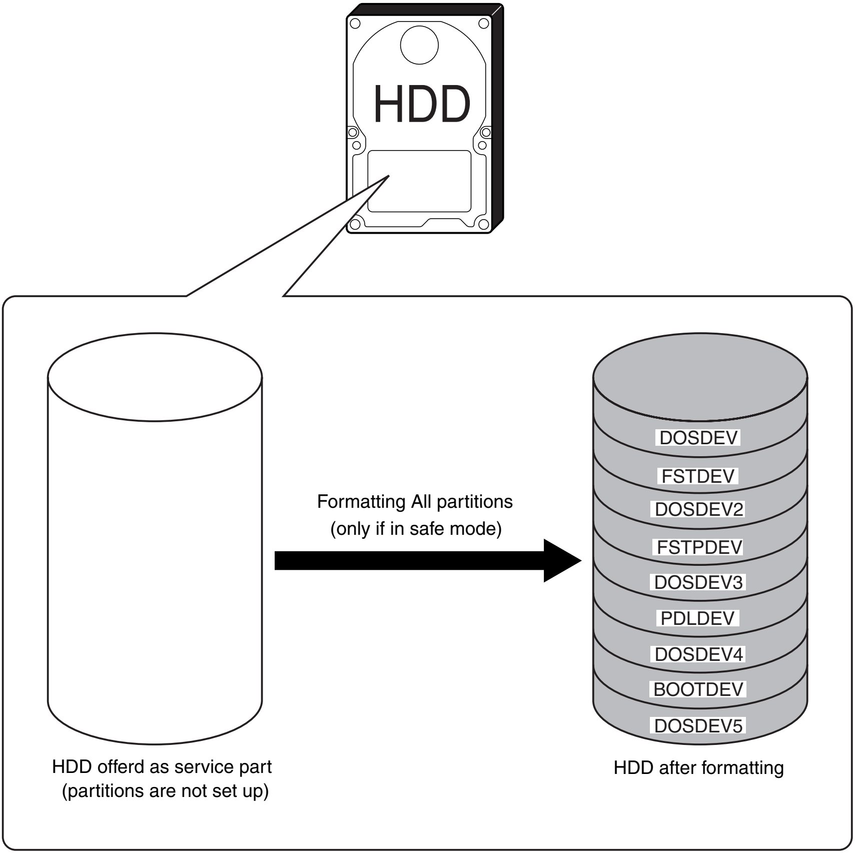
The information needed for the job has been obtained.
Check the indicated descriptions, and press [OK].

F-16-20

16.3 Formatting the HDD

16.3.1 Formatting All Partitions

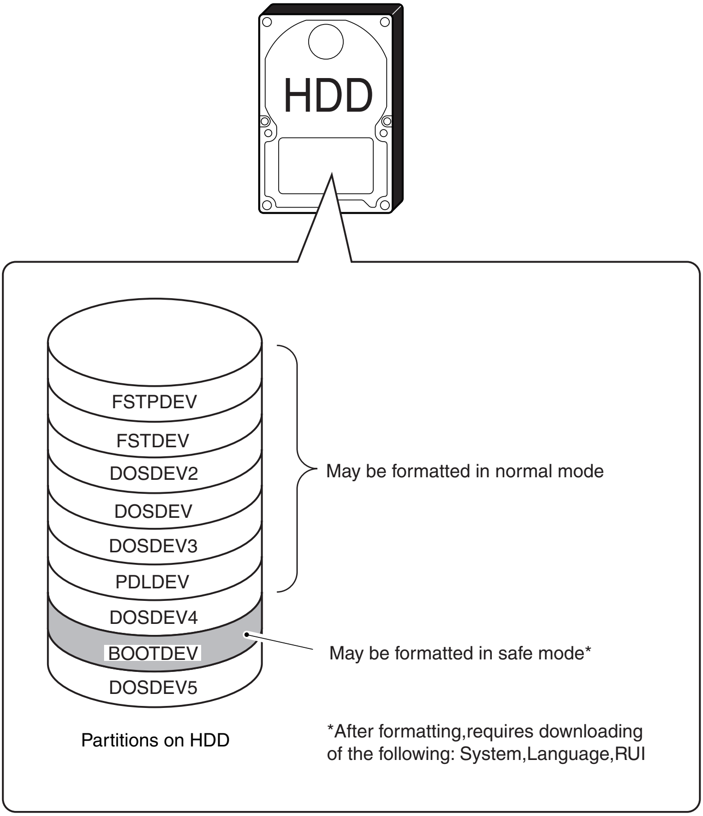
You will be settin up partitions on the HDD and formatting (initializing) them for use by the main controller.


HDD
Formatting All partitions
(only if in safe mode)
DOSDEV
FSTDEV
DOSDEV2
FSTPDEV
DOSDEV3
PDLDEV
DOSDEV4
BOOTDEV
DOSDEV5
HDD offerd as service part
(partitions are not set up)
HDD after formatting

F-16-21

16.3.2 Formatting Selected Partitions

You will be formatting (initializing) partitions that you have selected.


HDD
FSTPDEV
FSTDEV
DOSDEV2
DOSDEV
DOSDEV3
PDLDEV
DOSDEV4
BOOTDEV
DOSDEV5
May be formatted in normal mode
May be formatted in safe mode*
Partitions on HDD
*After formatting,requires downloading of the following: System,Language,RUI

F-16-22

Formatting Partitions Using the SST

T-16-3

Name of partition selected by the SST	**Partition that is formatted**
FSTDEV	FSTDEV, FSTPDEV, DOSDEV, DOSDEV2
DOSDEV3	DOSDEV3
PDLDEV	PDLDEV
DOSDEV4	DOSDEV4
DOSDEV5	DOSDEV5
BOOTDEV	BOOTDEV

⚠

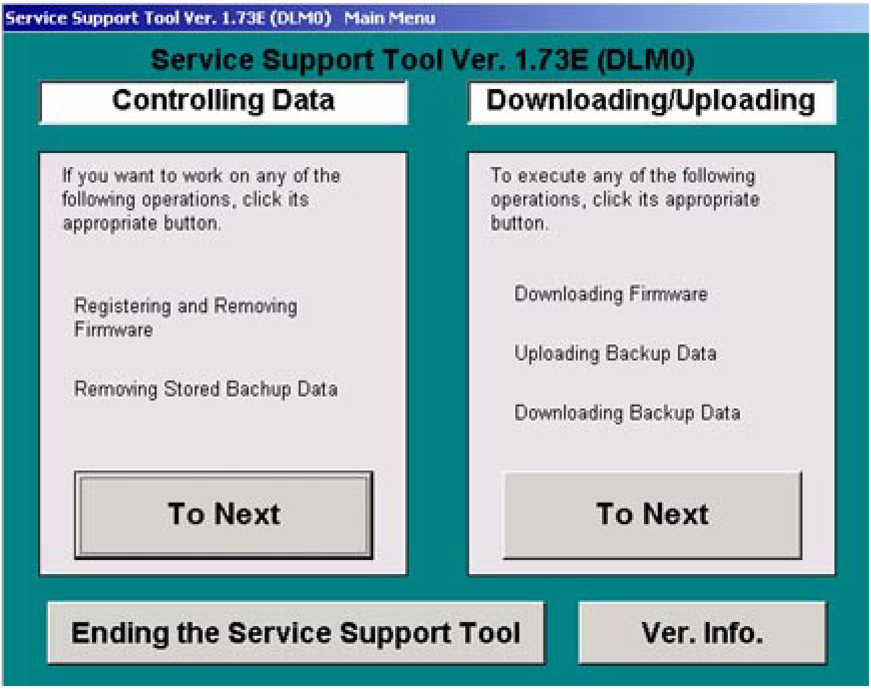
-4 partitions (FSTDEV, FSTPDEV, DOSDEV, DOSDEV2) are formatted at hte same time.
-Formatting of DOSDEV4 requires the use of the SST.

The actual formatting of FSTDEV and PDLDEV takes place when the machine is started up the next time, and it takes as long as the following:
Formatting of FSTDEV: 2 min (approx.)
Formatting of PDLDEV: 5 min (approx.)
Formatting of All partitions: 7 min (approx.)

-The times vary according to the state of the HDD, and the progress of formatting is indicated by means of a progress bar.

16.3.3 Formatting Procedure

1) Click [To next] under Downloading/Uploading.


Service Support Tool Ver. 1.73E (DLM0) Main Menu
Service Support Tool Ver. 1.73E (DLM0)
Controlling Data
Downloading/Uploading
To Next
To Next
Ending the Service Support Tool
Ver. Info.

If you want to work on any of the following operations, click its appropriate button.

Registering and Removing Firmware

Removing Stored Bachup Data

To execute any of the following operations, click its appropriate button.

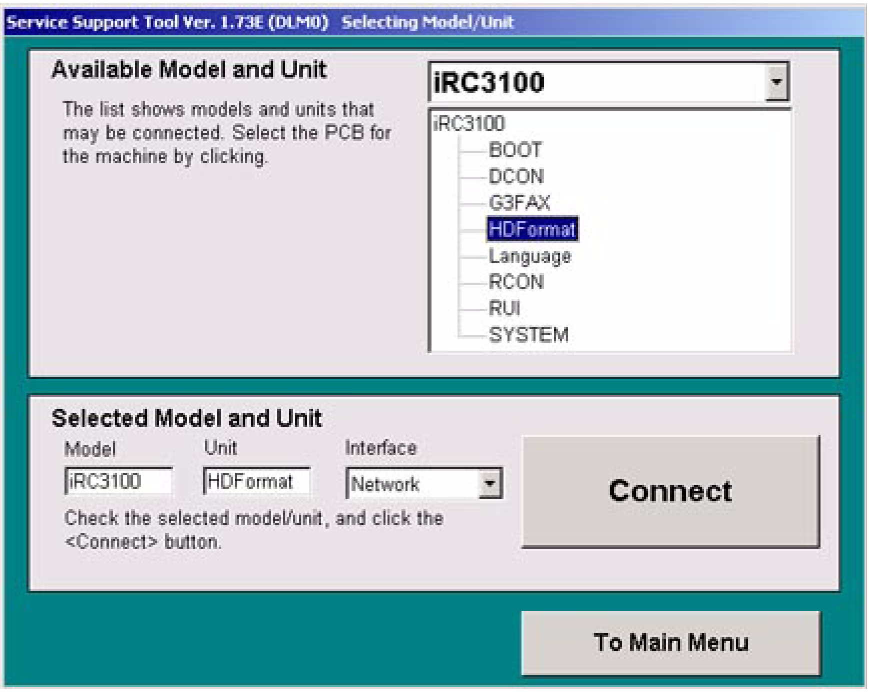
Downloading Firmware

Uploading Backup Data

Downloading Backup Data

F-16-23

2) Select [HDForamt], and click [Connect].



Service Support Tool Ver. 1.73E (DLM0) Selecting Model/Unit

Available Model and Unit

The list shows models and units that may be connected. Select the PCB for the machine by clicking.

iRC3100
iRC3100
BOOT
DCON
G3FAX
HDFormat
Language
RCON
RUI
SYSTEM

Selected Model and Unit

Model: iRC3100

Unit: HDFormat

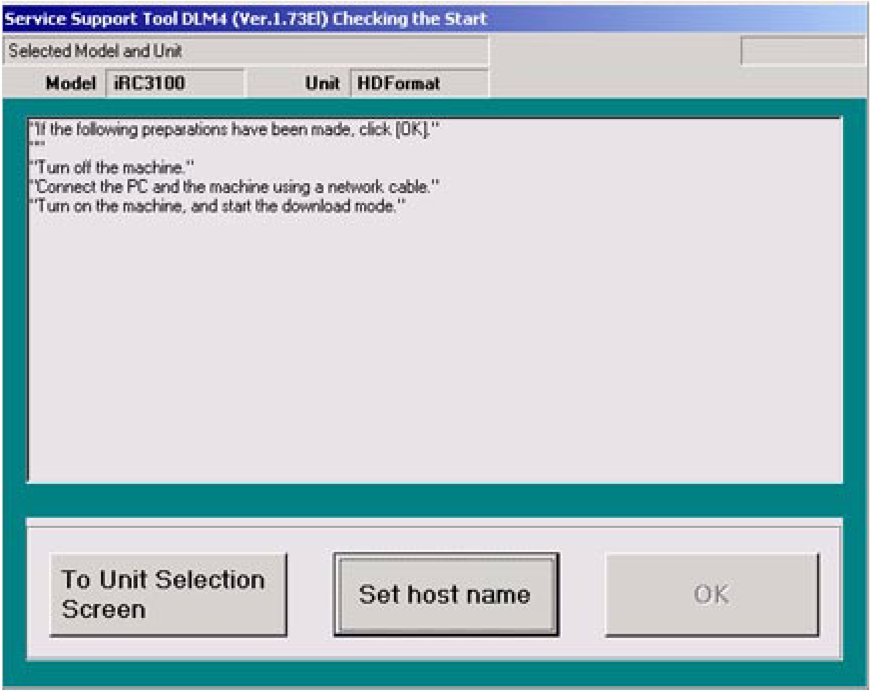
Interface: Network

Check the selected model/unit, and click the <Connect> button.

Connect
To Main Menu

F-16-24

3) Click [Set host name].



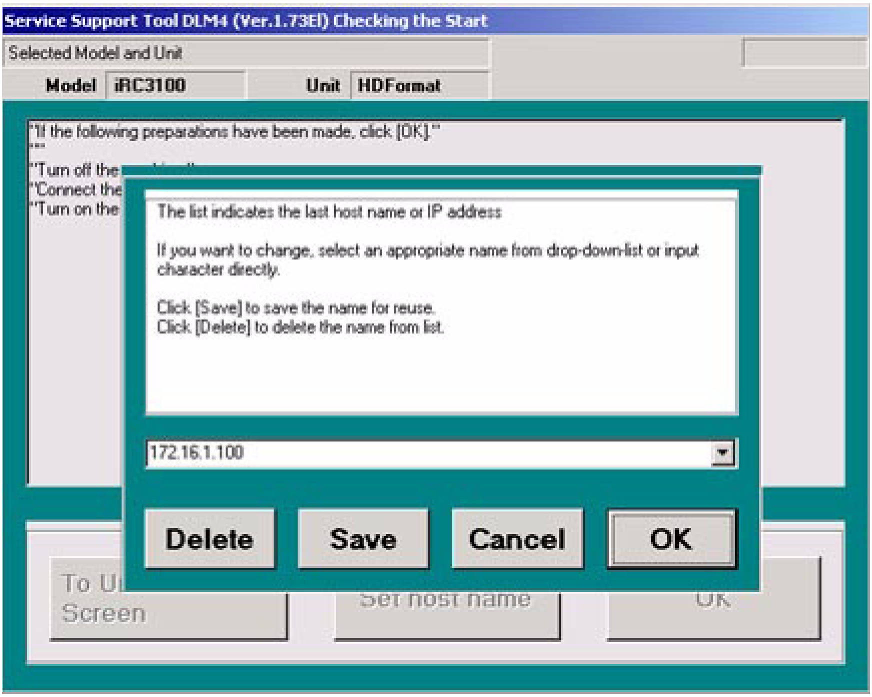
Service Support Tool DLM4 (Ver.1.73El) Checking the Start
Selected Model and Unit
Model
Unit
To Unit Selection Screen
Set host name
OK

Model: iRC3100
Unit: HDFormat

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-25

4) The machiine's IP address is entered automatically; click [OK].


Service Support Tool DLM4 (Ver.1.73El) Checking the Start
Selected Model and Unit
Model
Unit
Delete
Save
Cancel
OK
To U
Screen
Set host name
OK

Model: iRC3100
Unit: HDFormat

"If the following preparations have been made, click [OK]."
""
"Turn off the
"Connect the
"Turn on the

The list indicates the last host name or IP address

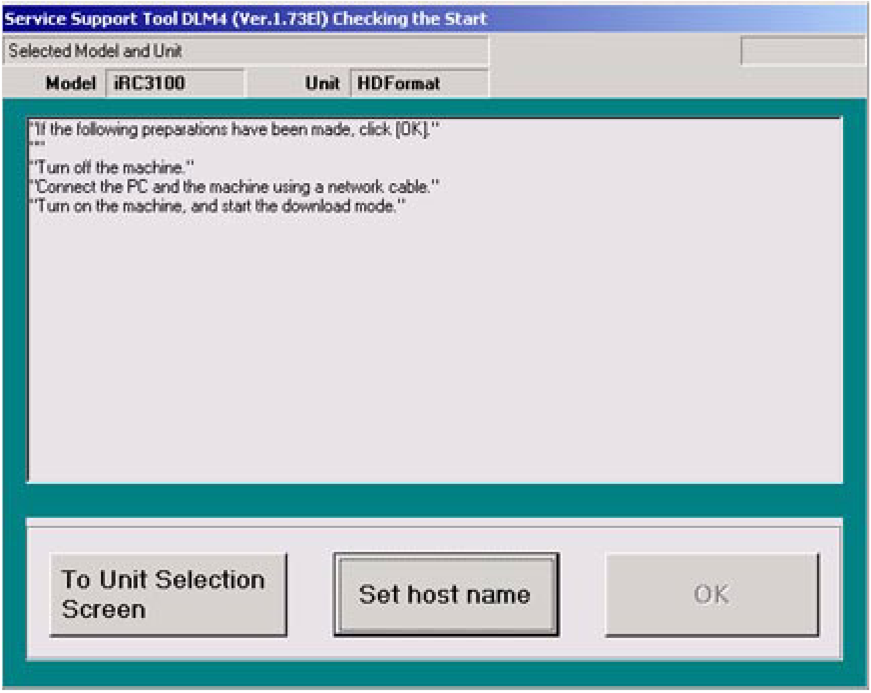
If you want to change, select an appropriate name from drop-down-list or input character directly.

Click [Save] to save the name for reuse.
Click [Delete] to delete the name from list.

172.16.1.100

F-16-26

5) Click [OK] to start connection.


Service Support Tool DLM4 (Ver.1.73El) Checking the Start
Selected Model and Unit
Model
Unit
To Unit Selection Screen
Set host name
OK

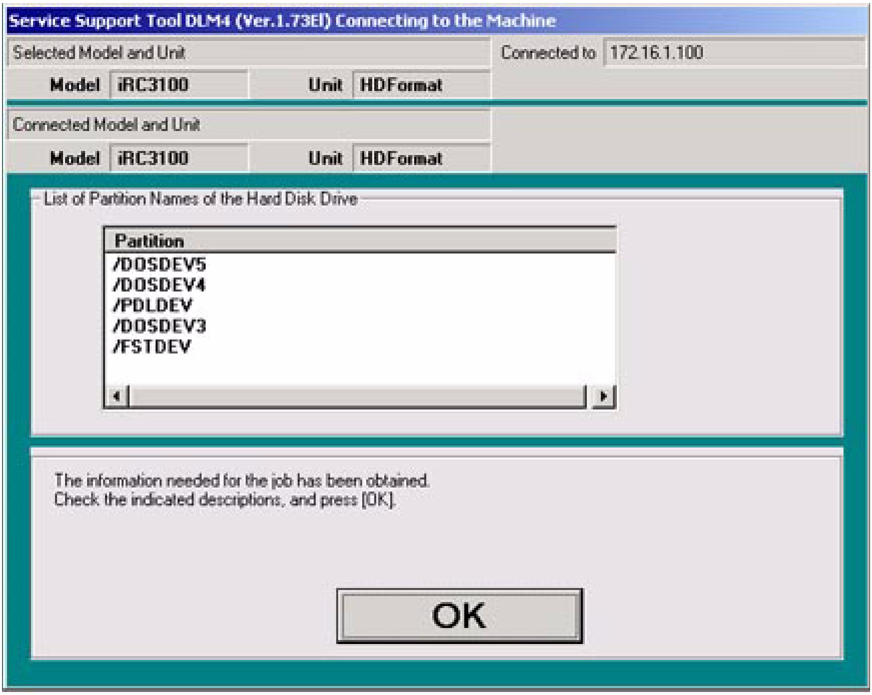
Model iRC3100

Unit HDFormat

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-27

6) When the machine has made a connection and brings up the following screen, click [OK].



Service Support Tool DLM4 (Ver.1.73El) Connecting to the Machine

Selected Model and Unit

Model iRC3100 **Unit** HDFormat

Connected to 172.16.1.100

Connected Model and Unit

Model iRC3100 **Unit** HDFormat

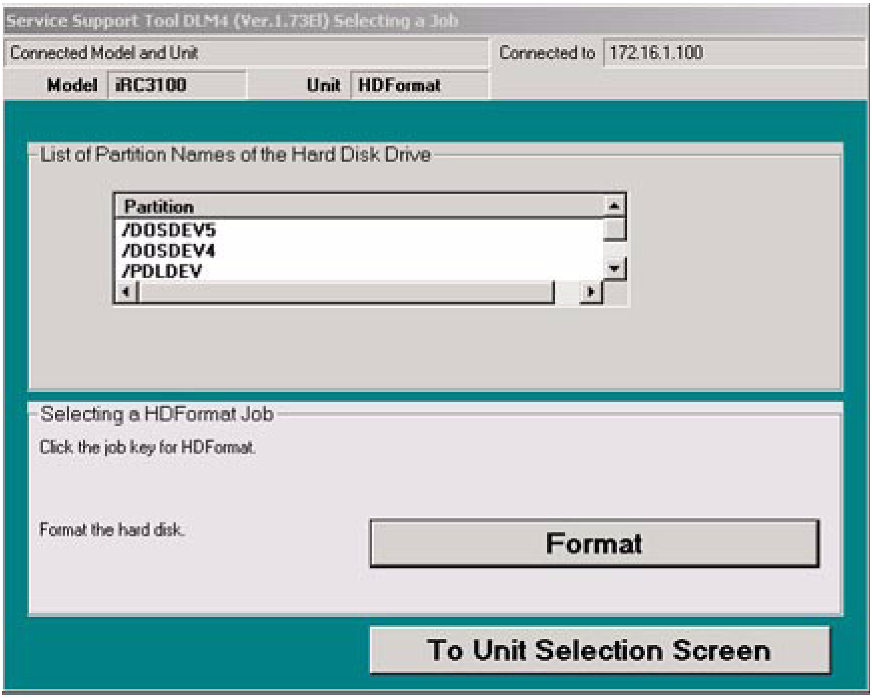
List of Partition Names of the Hard Disk Drive

Partition
/DOSDEV5
/DOSDEV4
/PDLDEV
/DOSDEV3
/FSTDEV

The information needed for the job has been obtained.
Check the indicated descriptions, and press [OK].

F-16-28

7) Click [Format].


Service Support Tool DLM4 (Ver.1.73El) Selecting a Job
Connected Model and Unit
Connected to
Model
Unit
List of Partition Names of the Hard Disk Drive
Partition
Selecting a HDFormat Job
Format
To Unit Selection Screen

Connected to 172.16.1.100

Model iRC3100

Unit HDFormat

/DOSDEV5
/DOSDEV4
/PDLDEV

Click the job key for HDFormat.

Format the hard disk.

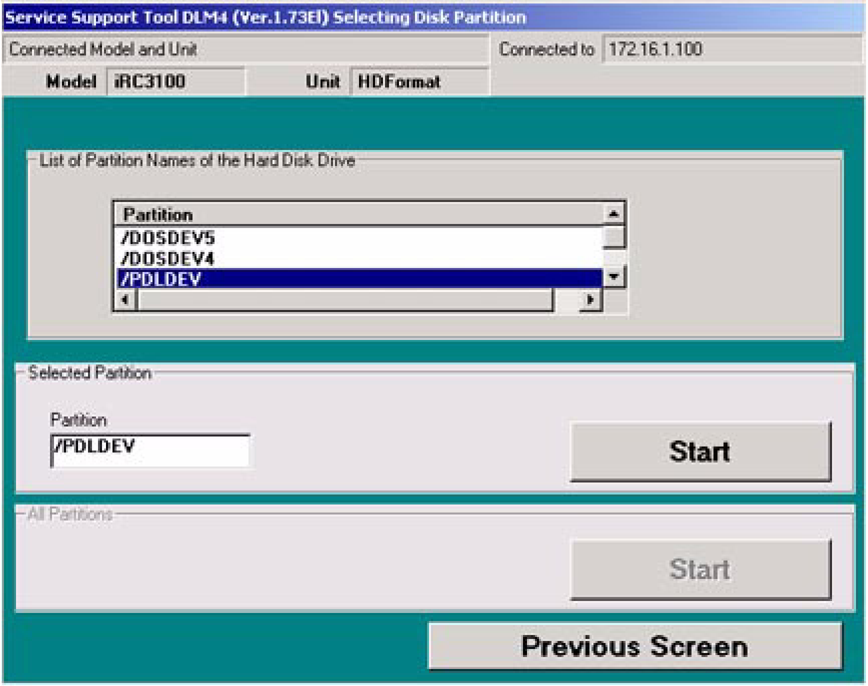
F-16-29

8) Select the partition you want to format from the list, and click [start].

⚠

When formatting all partitions, click [start] under All partitions (enabled if in safe mode).

-If formatting in Normal Mode



Service Support Tool DLM4 (Ver.1.73El) Selecting Disk Partition

Connected Model and Unit

Model: iRC3100

Unit: HDFormat

Connected to: 172.16.1.100

List of Partition Names of the Hard Disk Drive

Partition
/DOSDEV5
/DOSDEV4
/PDLDEV

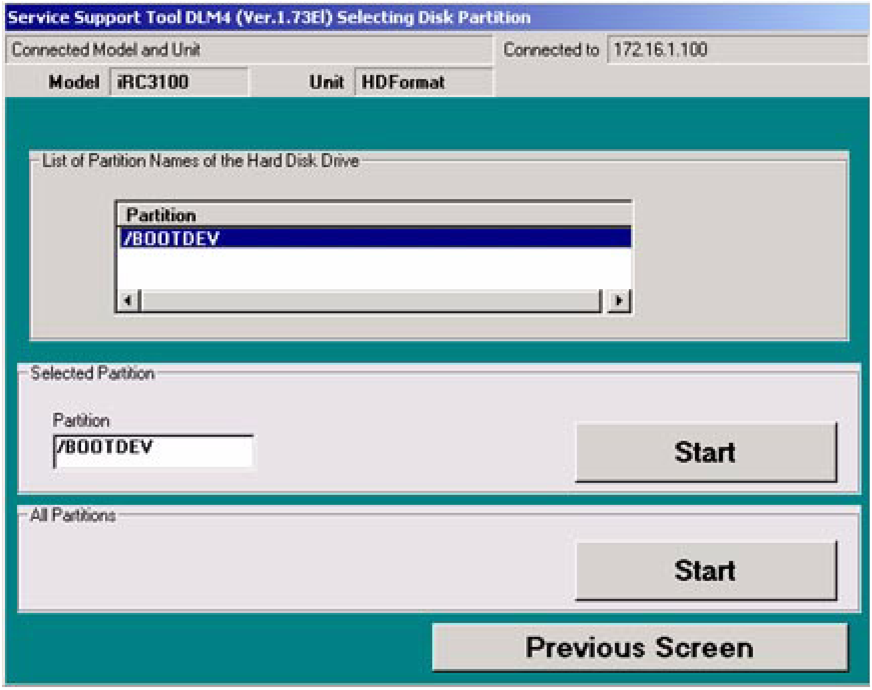
Selected Partition

Partition: /PDLDEV

Start
All Partitions
Start
Previous Screen

F-16-30

-If formatting in Safe Mode



Service Support Tool DLM4 (Ver.1.73El) Selecting Disk Partition

Connected Model and Unit

Connected to: 172.16.1.100

Model: iRC3100

Unit: HDFormat

List of Partition Names of the Hard Disk Drive

Partition: /BOOTDEV

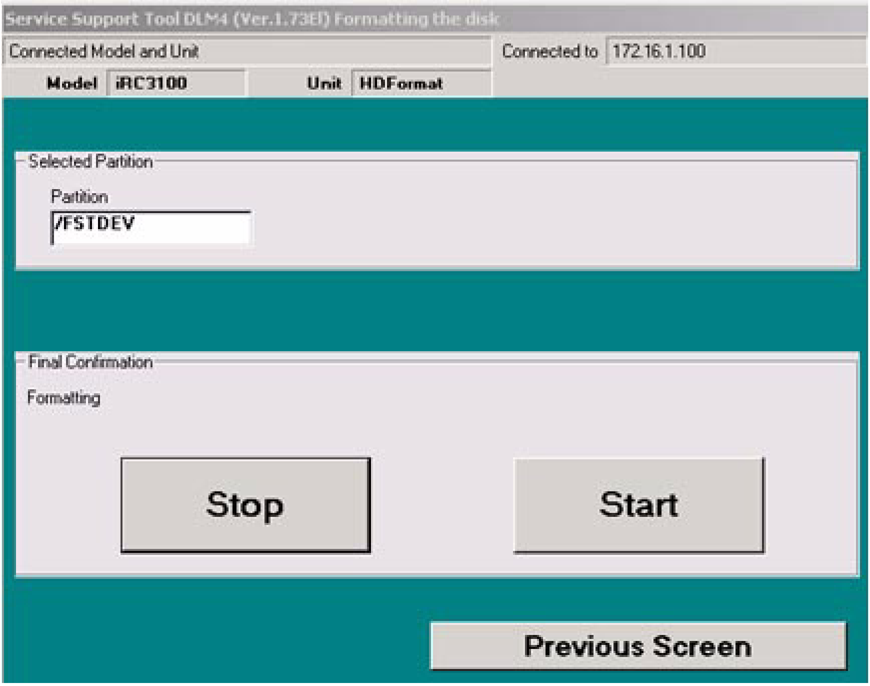
Selected Partition

Partition: /BOOTDEV

Start
All Partitions
Start
Previous Screen

F-16-31

9) When the machine indicates the message for confirmation for the last time, click [Start].



Service Support Tool DLM4 (Ver.1.73EI) Formatting the disk

Connected Model and Unit

Model: iRC3100

Unit: HDFormat

Connected to: 172.16.1.100

Selected Partition

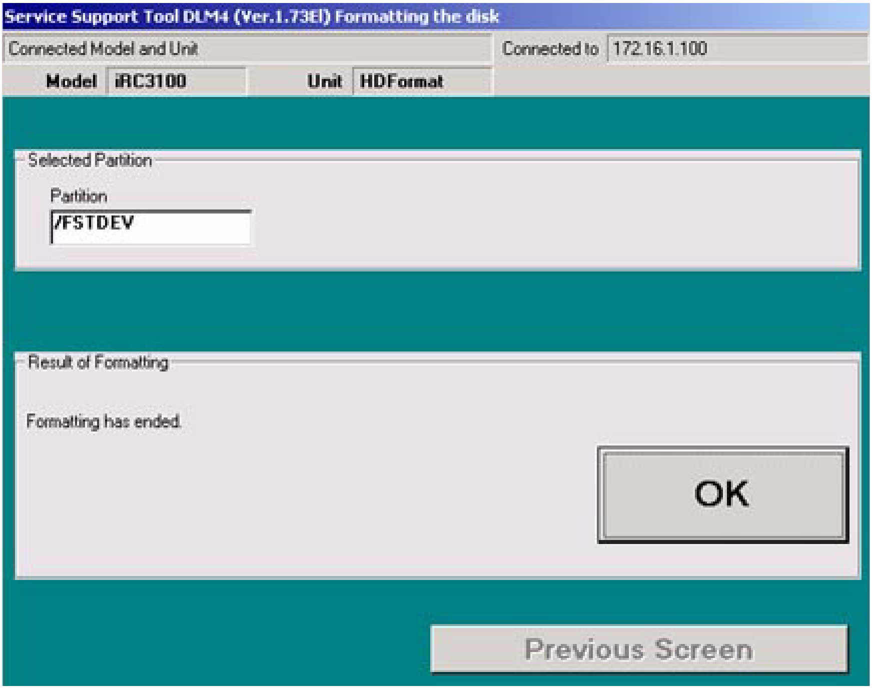
Partition: /FSTDEV

Final Confirmation

Formatting

F-16-32

10) After the machine indicates the message to the indicate the end of formatting, click [OK].



Service Support Tool DLM4 (Ver.1.73El) Formatting the disk

Connected Model and Unit

Connected to: 172.16.1.100

Model: iRC3100

Unit: HDFormat

Selected Partition

Partition: /FSTDEV

Result of Formatting

Formatting has ended.

F-16-33

11) Click [To Unit Selectioin Screen].

⚠

-If you have formatted all partitions or BOOTDEV, you must download the following:
System, Language, RUI
(If you fail to download these, an error(E602) will ocur when the main power switch is turned ON.)

-The actual formattin of FSTDEV and PDLDEV takes place when the machine is started up the next time, and it takes as long as the following:
Formatting of FSTDEV: 2 min (approx.)
Formatting of PDLDEV: 5 min (approx.)
Formatting of All partitions: 7 min (approx.)

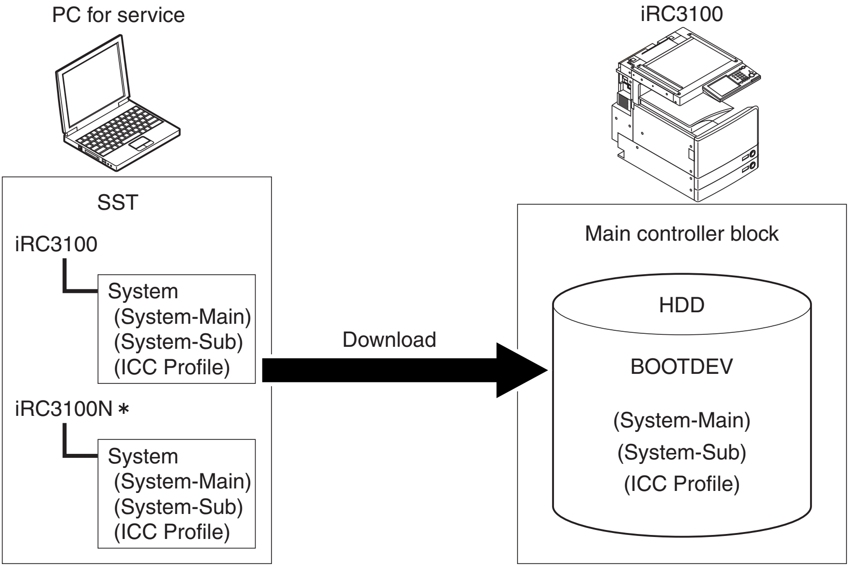
-The times vary according to the state of the HDD, and the progress of formatting is indicated by means of a progress bar.

-You must not turn off the machine's main power switch while the progress bar is shown.

16.4 Downloading System Software

16.4.1 Downloading the System Software

16.4.1.1 Outline


PC for service
iRC3100
SST
iRC3100
System
(System-Main)
(System-Sub)
(ICC Profile)
iRC3100N＊
System
(System-Main)
(System-Sub)
(ICC Profile)
Download
Main controller block
HDD
BOOTDEV
(System-Main)
(System-Sub)
(ICC Profile)

F-16-34

The system software comes in 3 types.
In the case of Japan, appropriate model must be selected with reference to the presence/absence of support for NetWare.

T-16-4

Country	SST installation model	NetWare	Remarks
100V	iRC3100	Not supported	Installed at time of shipment to iRC3100 (100V)
	iRC3100N	Supported	Installed at time of shipment to iRC3100F(100V)/3100N(100V)/ 3100i(100V)
120/230V	iRC3100	Supported	Installed at time of shipment to iR3100 (120/230V)/3100N(120/230V)

The machine's System software consists of multiple files.
The SST handles these files in group, and transfers them in succession at time of downloading.

T-16-5

Notation	Function
System-Main	Program for main CPU
System-Sub	Program for sub CPU
ICC Profile	color correction information file for PDL functions

16.4.1.2 Downloading Procedure

[Makin Checks in Advance **(only in Japan)**]

-Chcek the type of system software installed to the machine (support/non-support of NetWare) in service mode.

COPIER> DISPLAY> ACC-STS> NETWARE

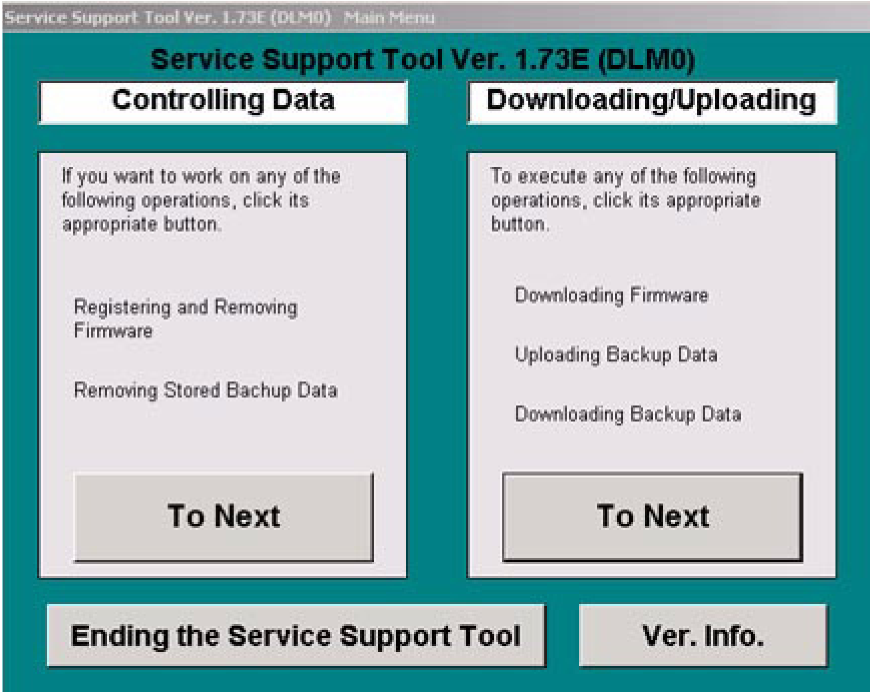
1: Netware supported

0: Netware not supported

-Select the type of system software to download using the name of the model in SST.
Name of model iRC3100: NetWare not supported
iRC3100N: NetWare supported

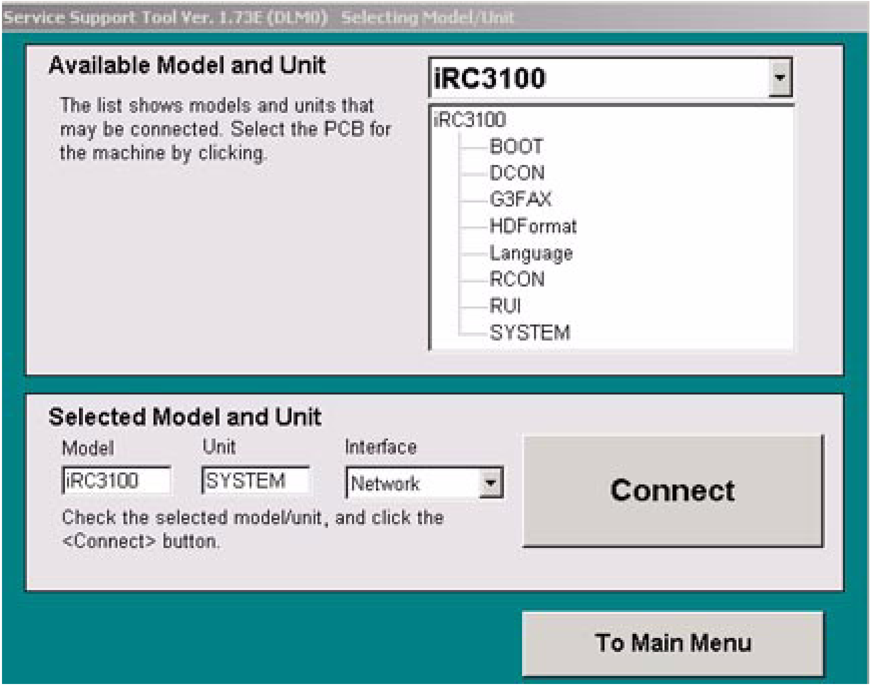
[Procedure]

1) Click [To Next] under Downloading/Uploading.


Service Support Tool Ver. 1.73E (DLM0) Main Menu
Service Support Tool Ver. 1.73E (DLM0)
Controlling Data
Downloading/Uploading
If you want to work on any of the following operations, click its appropriate button.
Registering and Removing Firmware
Removing Stored Bachup Data
To Next
To execute any of the following operations, click its appropriate button.
Downloading Firmware
Uploading Backup Data
Downloading Backup Data
To Next
Ending the Service Support Tool
Ver. Info.

F-16-35

2) Select the SYSTEM of the iRC3100, and click [Connect].
(In Japan and if NetWare is supported, be sure to select the SYSTEM of the iRC3100N.)



Service Support Tool Ver. 1.73E (DLM0) Selecting Model/Unit

Available Model and Unit

The list shows models and units that may be connected. Select the PCB for the machine by clicking.

iRC3100
iRC3100
BOOT
DCON
G3FAX
HDFormat
Language
RCON
RUI
SYSTEM

Selected Model and Unit

Model: iRC3100

Unit: SYSTEM

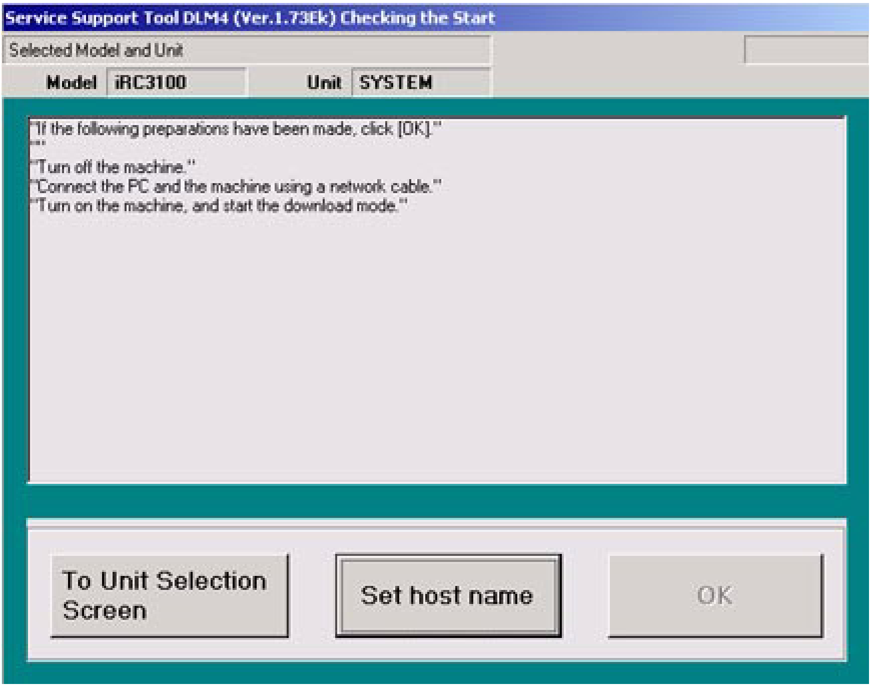
Interface: Network

Check the selected model/unit, and click the <Connect> button.

Connect
To Main Menu

F-16-36

3) Click [Set host name].


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Model
Unit
To Unit Selection Screen
Set host name
OK

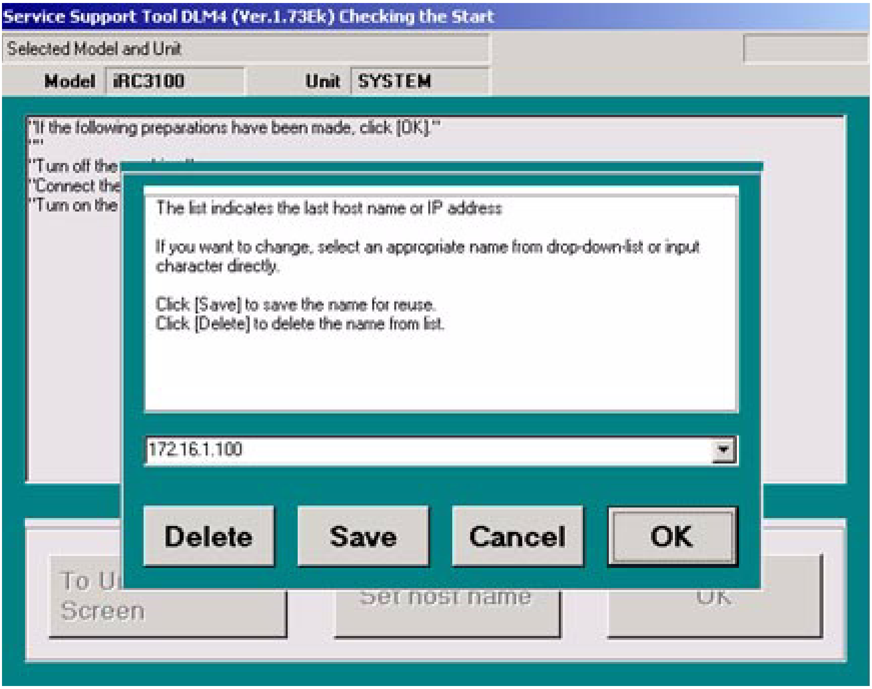
Model: iRC3100

Unit: SYSTEM

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-37

4) The machine's IP address is entered automatically; click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start

Selected Model and Unit

Model iRC3100 **Unit** SYSTEM

"If the following preparations have been made, click [OK]."
""
"Turn off the
"Connect the
"Turn on the

The list indicates the last host name or IP address

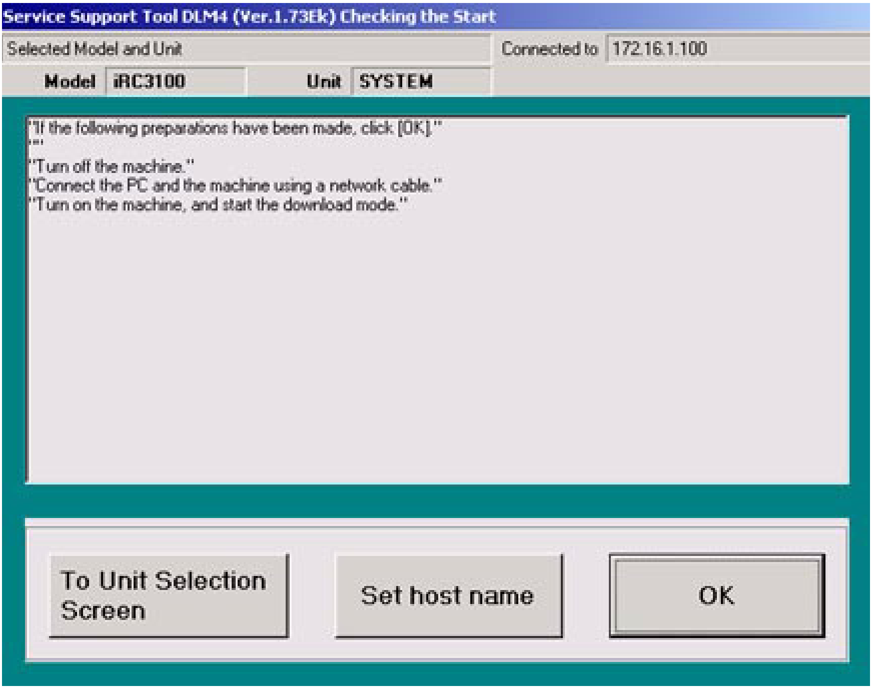
If you want to change, select an appropriate name from drop-down-list or input character directly.

Click [Save] to save the name for reuse.
Click [Delete] to delete the name from list.

172.16.1.100

F-16-38

5) Click [OK] to start connection.


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Connected to
Model
Unit
To Unit Selection Screen
Set host name
OK

Connected to 172.16.1.100

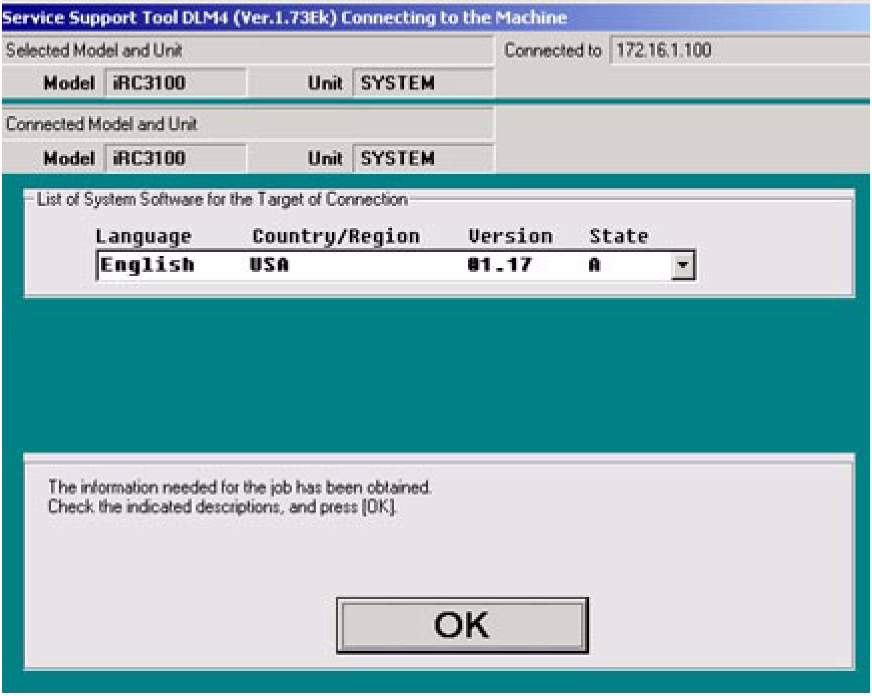
Model iRC3100

Unit SYSTEM

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-39

6) When the machine has made a connection and brings up the following screen, click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Connecting to the Machine

Selected Model and Unit

Model iRC3100 Unit SYSTEM

Connected to 172.16.1.100

Connected Model and Unit

Model iRC3100 Unit SYSTEM

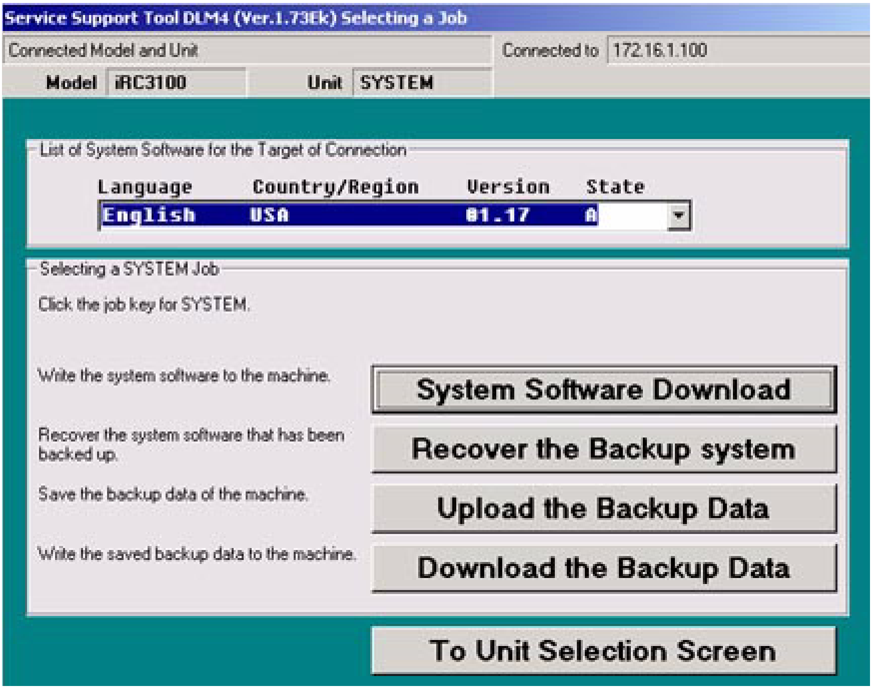
List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

The information needed for the job has been obtained.
Check the indicated descriptions, and press [OK].

F-16-40

7) Click [System Software Download].


Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Job
Connected Model and Unit
Connected to
Model
Unit
List of System Software for the Target of Connection
Language
Country/Region
Version
State
Selecting a SYSTEM Job
System Software Download
Recover the Backup system
Upload the Backup Data
Download the Backup Data
To Unit Selection Screen

Model iRC3100

Unit SYSTEM

Connected to 172.16.1.100

Language	Country/Region	Version	State
English	USA	01.17	A

Click the job key for SYSTEM.

Write the system software to the machine.

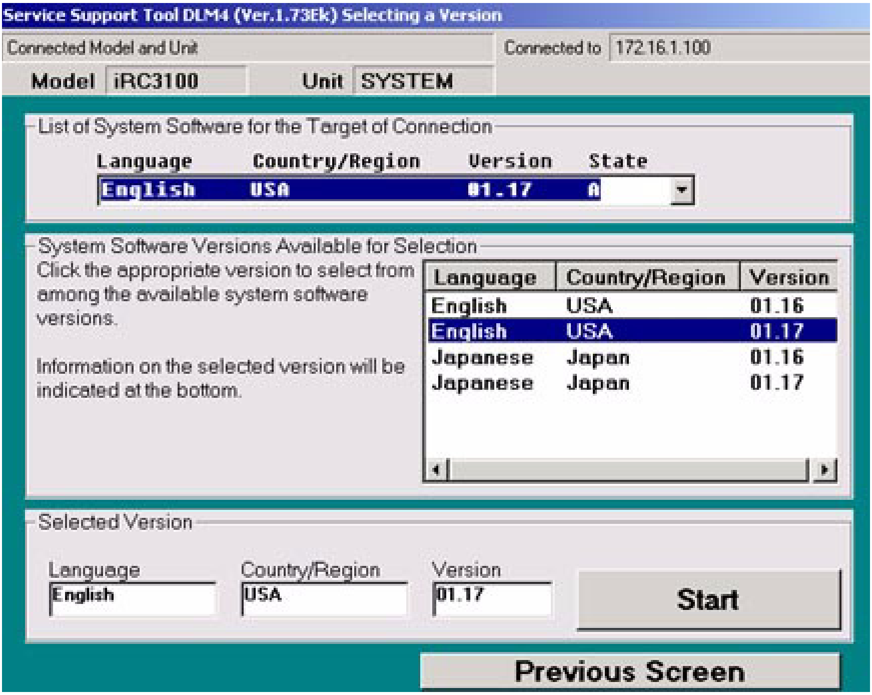
Recover the system software that has been backed up.

Save the backup data of the machine.

Write the saved backup data to the machine.

F-16-41

8) Select the version to download, and click [Start].



Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Version

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100

Unit SYSTEM

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

System Software Versions Available for Selection

Click the appropriate version to select from among the available system software versions.

Information on the selected version will be indicated at the bottom.

Language	Country/Region	Version
English	USA	01.16
English	USA	01.17
Japanese	Japan	01.16
Japanese	Japan	01.17

Selected Version

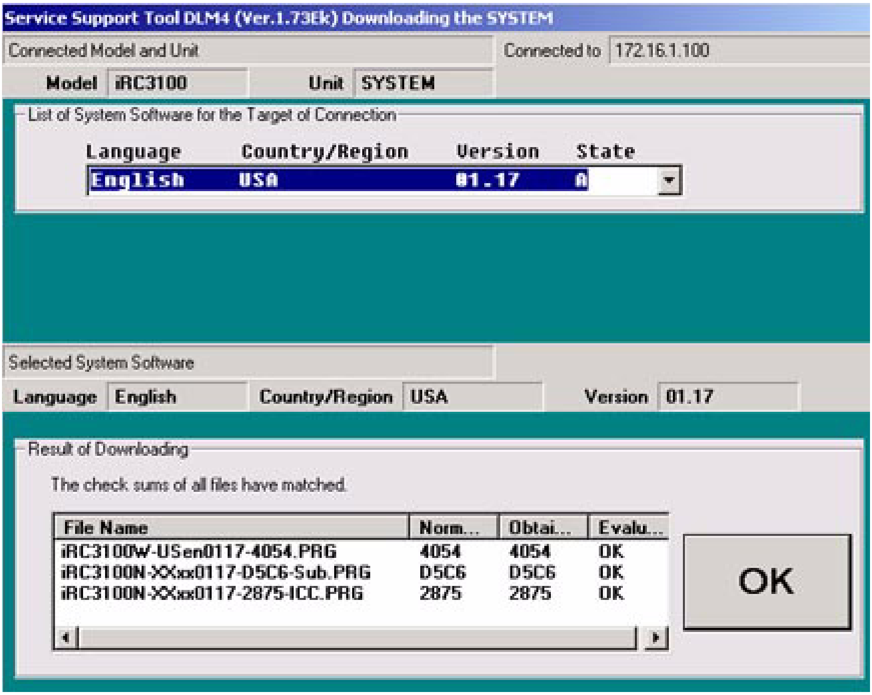
Language: English

Country/Region: USA

Version: 01.17

F-16-42

9) When the results of the downloading are indicated, and click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Downloading the SYSTEM

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100 Unit SYSTEM

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Selected System Software

Language English Country/Region USA Version 01.17

Result of Downloading

The check sums of all files have matched.

File Name	Norm...	Obtai...	Evalu...
iRC3100W-USen0117-4054.PRG	4054	4054	OK
iRC3100N-XXxx0117-D5C6-Sub.PRG	D5C6	D5C6	OK
iRC3100N-XXxx0117-2875-ICC.PRG	2875	2875	OK

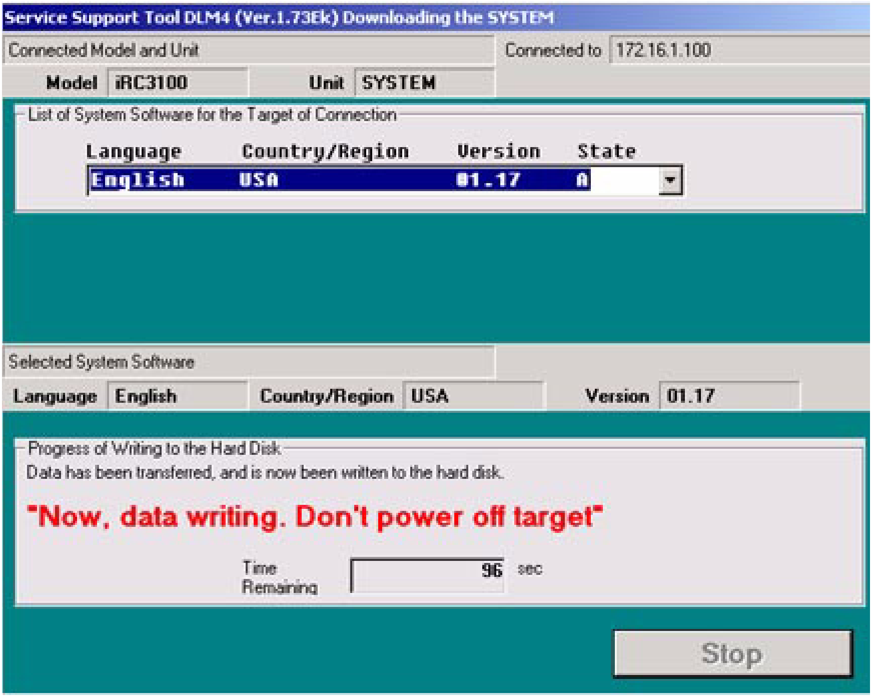
F-16-43

10) Click [To Unit Selection Screen].

⚠

Never turn off the machine while the following screen is shown.

Otherwise writing to the HDD will be suspended, preventing the machine to start up.



Service Support Tool DLM4 (Ver.1.73Ek) Downloading the SYSTEM

Connected Model and Unit

Model iRC3100 **Unit** SYSTEM

Connected to 172.16.1.100

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Selected System Software

Language English **Country/Region** USA **Version** 01.17

Progress of Writing to the Hard Disk

Data has been transferred, and is now been written to the hard disk.

"Now, data writing. Don't power off target"

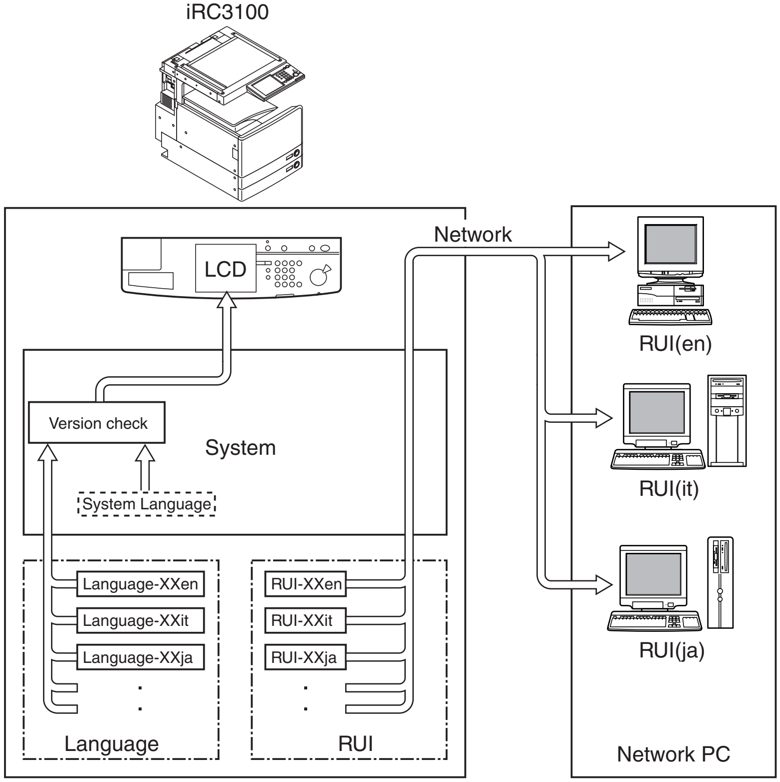
Time Remaining 96 sec

F-16-44

If the machine fails to start up, execute foramtting BOOTDEV using HDForamt and download the following:
System, Language, RUI

16.4.2 Downloading the RUI, and Language Module

16.4.2.1 Outline


iRC3100
Network
LCD
RUI(en)
Version check
System
RUI(it)
System Language
Language-XXen
Language-XXit
Language-XXja
RUI-XXen
RUI-XXit
RUI-XXja
RUI(ja)
Language
RUI
Network PC

F-16-45

T-16-6

Language used on control panel LCD

Check the versions of system software and language files.

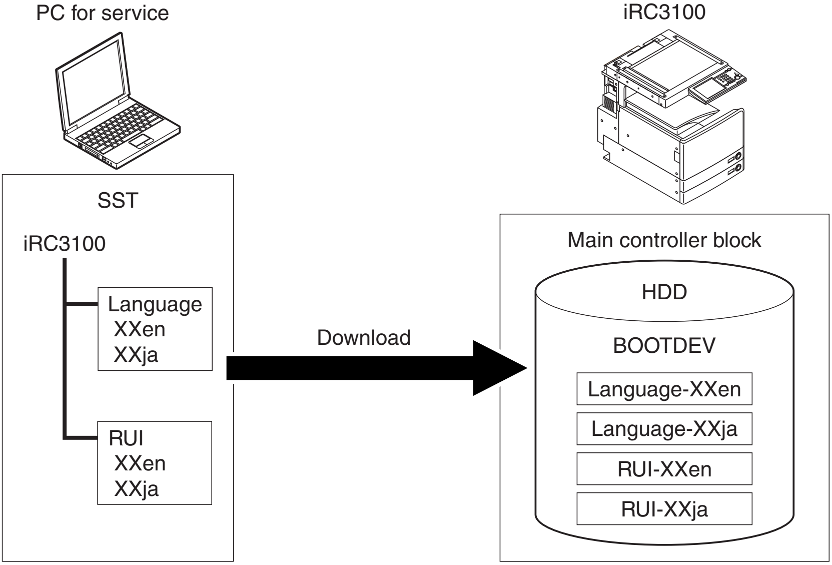
1) if the versions are correct
Selections may be made in Additional Function;
Common settings>Language Switch

2) if the versions are not correct
'E744' will be indicated.
Turn off and then on the main power switch so that the system language will be used.

T-16-7

Language used in RUI
Select on the RUI. A specific language may be selected for a specific PC.

<Language Code>	<Language>
de	German
en	English
fr	French
it	Italian
ja	Japanese

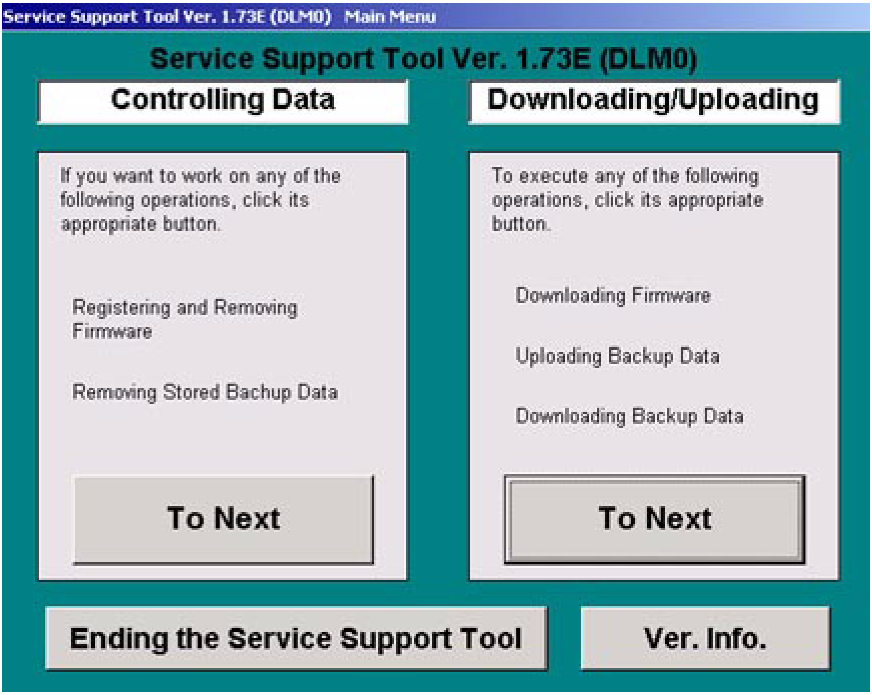

PC for service
iRC3100
SST
iRC3100
Language
XXen
XXja
RUI
XXen
XXja
Download
Main controller block
HDD
BOOTDEV
Language-XXen
Language-XXja
RUI-XXen
RUI-XXja

F-16-46

16.4.2.2 Downloading Procedure

[Procedure]
Downloading may take place when the machine is in normal or in safe mode.
Both Language and RUI files mey be downloaded in common among models.
(here,the iRC3100 is selected)

[describes downloading of the Language]
1) Click [To next] under Downloading/Uploading.

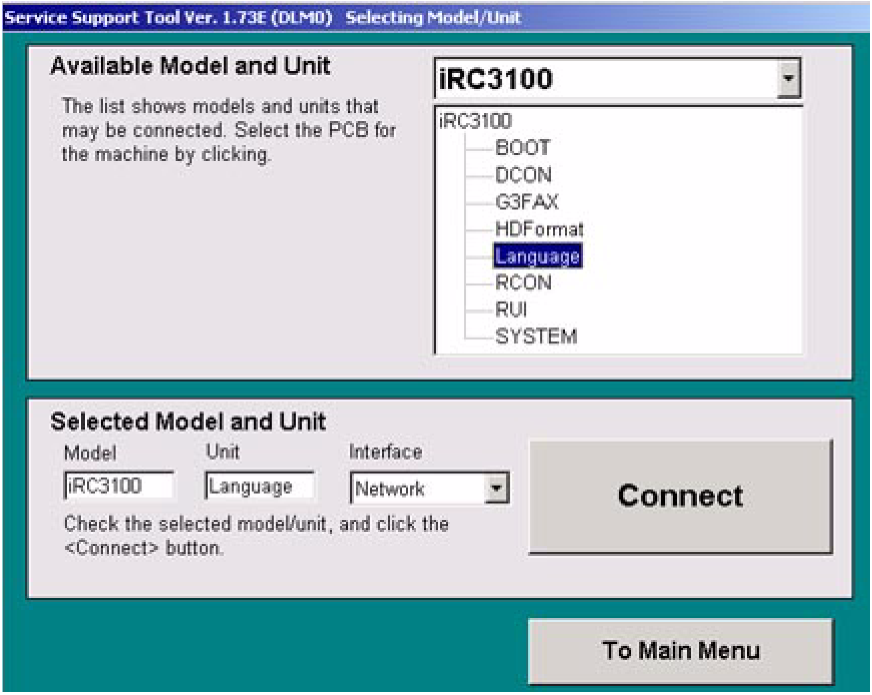

Service Support Tool Ver. 1.73E (DLM0) Main Menu
Service Support Tool Ver. 1.73E (DLM0)
Controlling Data
Downloading/Uploading
Registering and Removing Firmware
Removing Stored Bachup Data
Downloading Firmware
Uploading Backup Data
Downloading Backup Data
To Next
To Next
Ending the Service Support Tool
Ver. Info.

If you want to work on any of the following operations, click its appropriate button.

To execute any of the following operations, click its appropriate button.

F-16-47

2) Select [Language] for the iRC3100, and click [Connect].



Service Support Tool Ver. 1.73E (DLM0) Selecting Model/Unit

Available Model and Unit

The list shows models and units that may be connected. Select the PCB for the machine by clicking.

iRC3100

- iRC3100
  - BOOT
  - DCON
  - G3FAX
  - HDFormat
  - Language
  - RCON
  - RUI
  - SYSTEM

Selected Model and Unit

Model: iRC3100

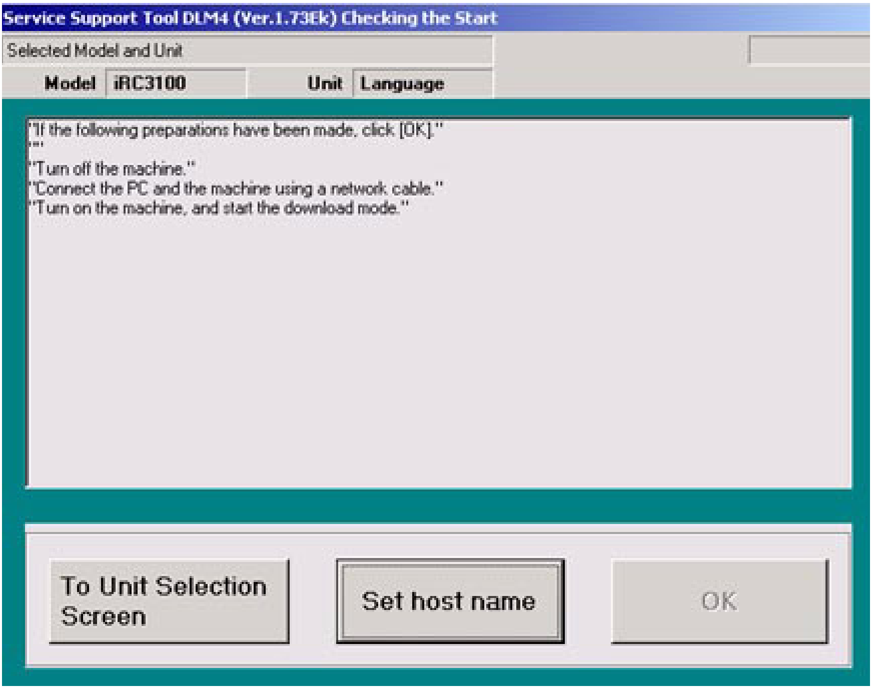
Unit: Language

Interface: Network

Check the selected model/unit, and click the <Connect> button.

F-16-48

3) Click [Set host name].

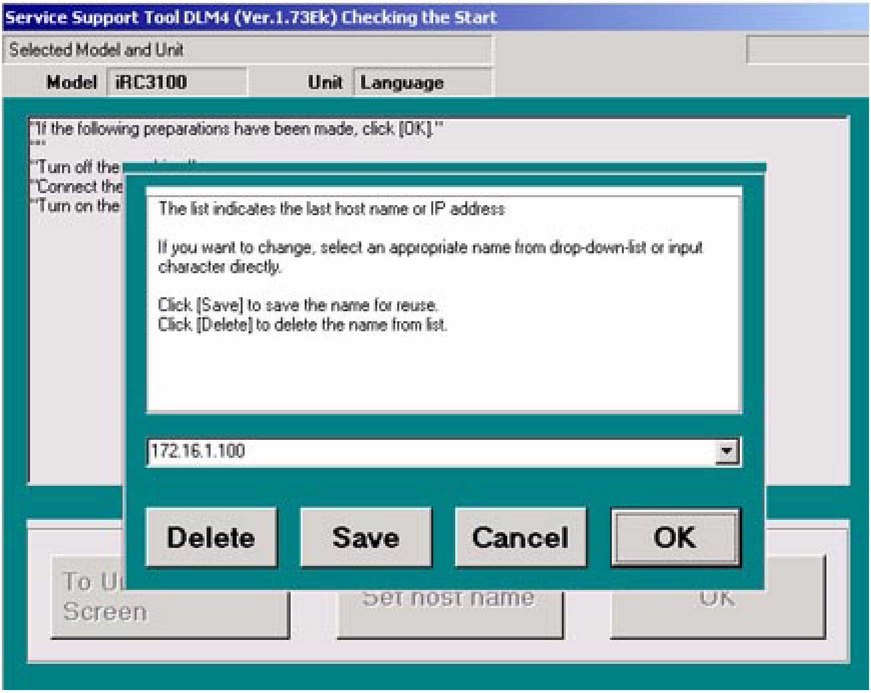


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Model
iRC3100
Unit
Language
To Unit Selection Screen
Set host name
OK

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-49

4) The machiine's IP address is entered automatically; click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start

Selected Model and Unit

Model iRC3100 **Unit** Language

"If the following preparations have been made, click [OK]."

"Turn off the

"Connect the

"Turn on the

The list indicates the last host name or IP address

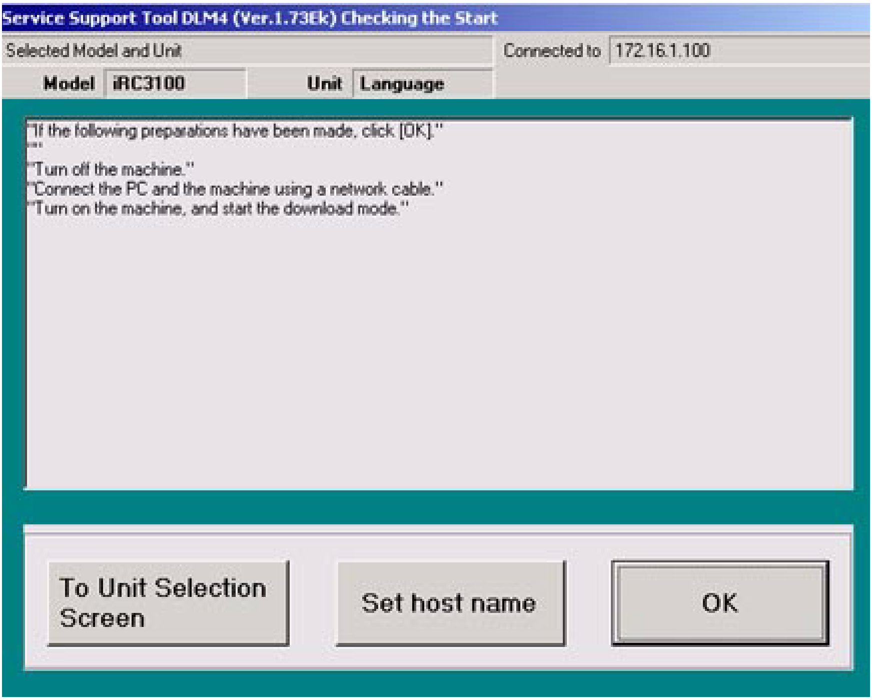
If you want to change, select an appropriate name from drop-down-list or input character directly.

Click [Save] to save the name for reuse.
Click [Delete] to delete the name from list.

172.16.1.100

F-16-50

5) Click [OK] to start conncection.

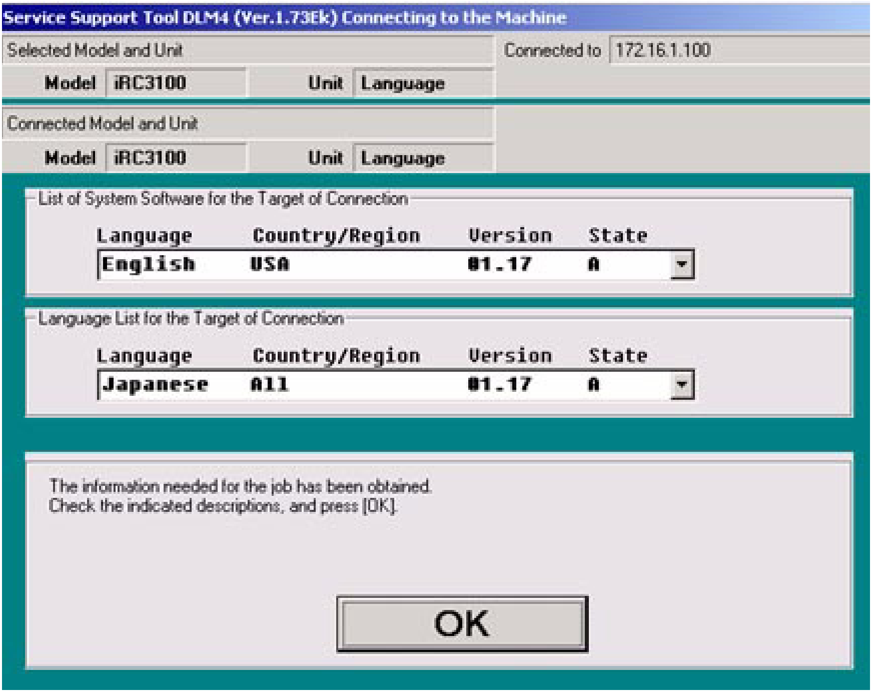

Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Connected to
Model
Unit
To Unit Selection Screen
Set host name
OK

Model: iRC3100
Unit: Language
Connected to: 172.16.1.100

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-51

6) When the machine has made a connection and bring up the following screen, click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Connecting to the Machine

Selected Model and Unit

Model iRC3100 **Unit** Language

Connected to 172.16.1.100

Connected Model and Unit

Model iRC3100 **Unit** Language

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

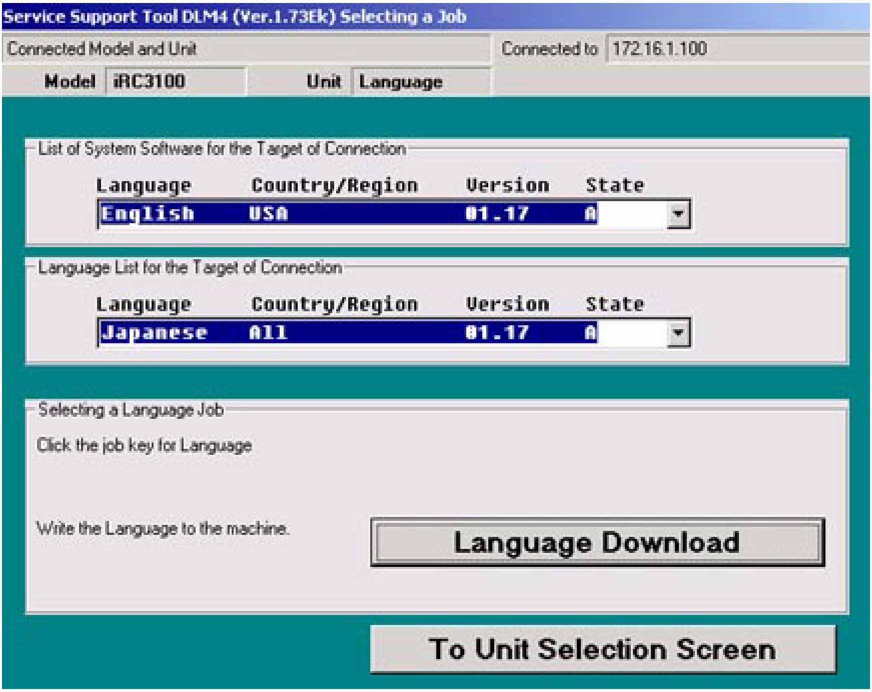
Language List for the Target of Connection

Language	Country/Region	Version	State
Japanese	All	01.17	A

The information needed for the job has been obtained.
Check the indicated descriptions, and press [OK].

F-16-52

7) Click [Language Download].



Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Job

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100 **Unit** Language

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Language List for the Target of Connection

Language	Country/Region	Version	State
Japanese	All	01.17	A

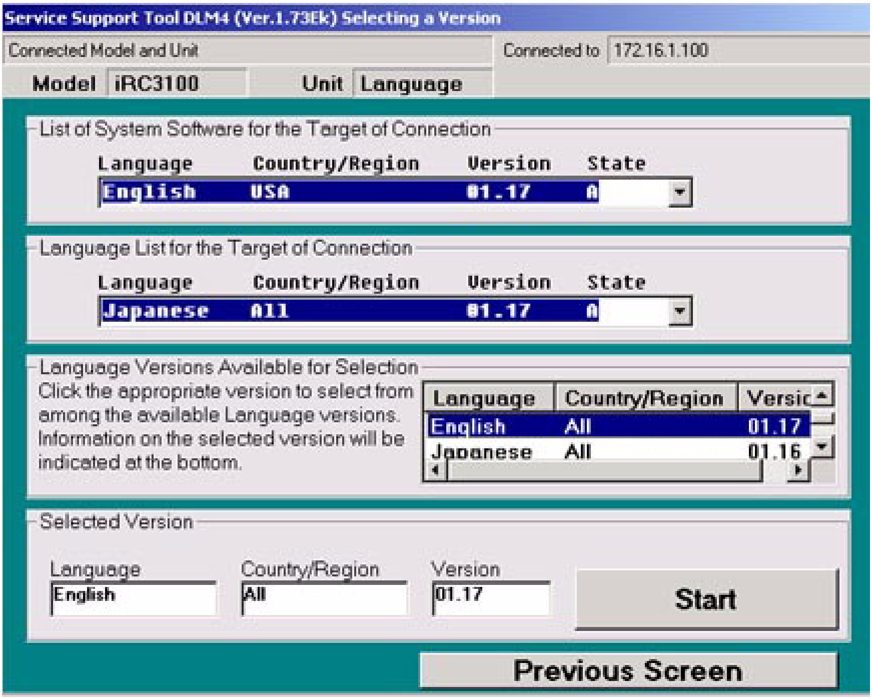
Selecting a Language Job

Click the job key for Language

Write the Language to the machine.

F-16-53

8) Select the version to download, and click [Start].


Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Version

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100 Unit Language

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Language List for the Target of Connection

Language	Country/Region	Version	State
Japanese	All	01.17	A

Language Versions Available for Selection

Click the appropriate version to select from among the available Language versions. Information on the selected version will be indicated at the bottom.

Language	Country/Region	Versic
English	All	01.17
Japanese	All	01.16

Selected Version

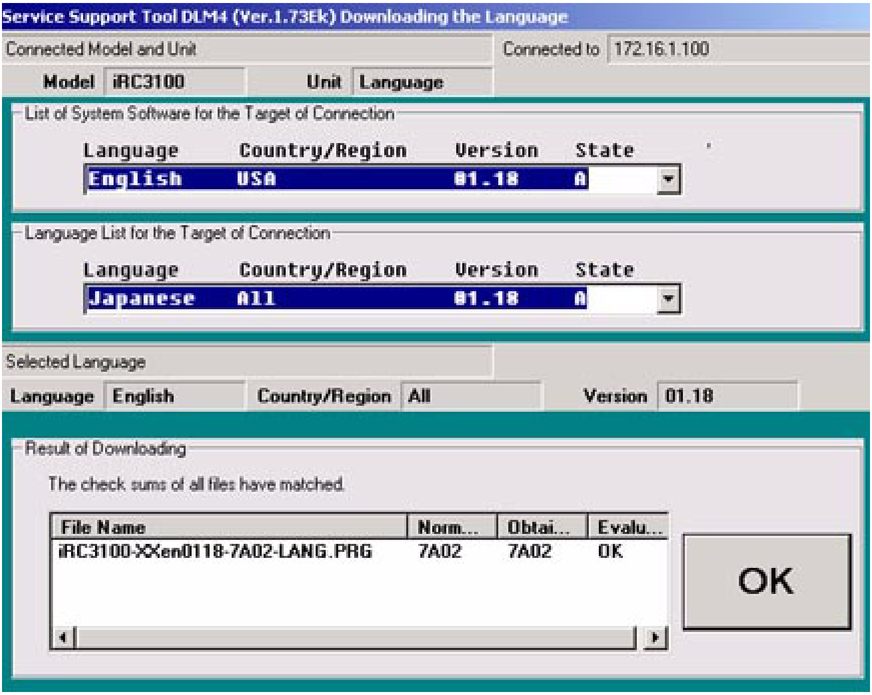
Language: English

Country/Region: All

Version: 01.17

F-16-54

9) When the results of the downloading are indicated. click [OK].


Service Support Tool DLM4 (Ver.1.73Ek) Downloading the Language
Connected Model and Unit
List of System Software for the Target of Connection
Language List for the Target of Connection
Selected Language
Result of Downloading
OK

Connected to 172.16.1.100

Model iRC3100 Unit Language

Language	Country/Region	Version	State
English	USA	01.18	A

Language	Country/Region	Version	State
Japanese	All	01.18	A

Language English Country/Region All Version 01.18

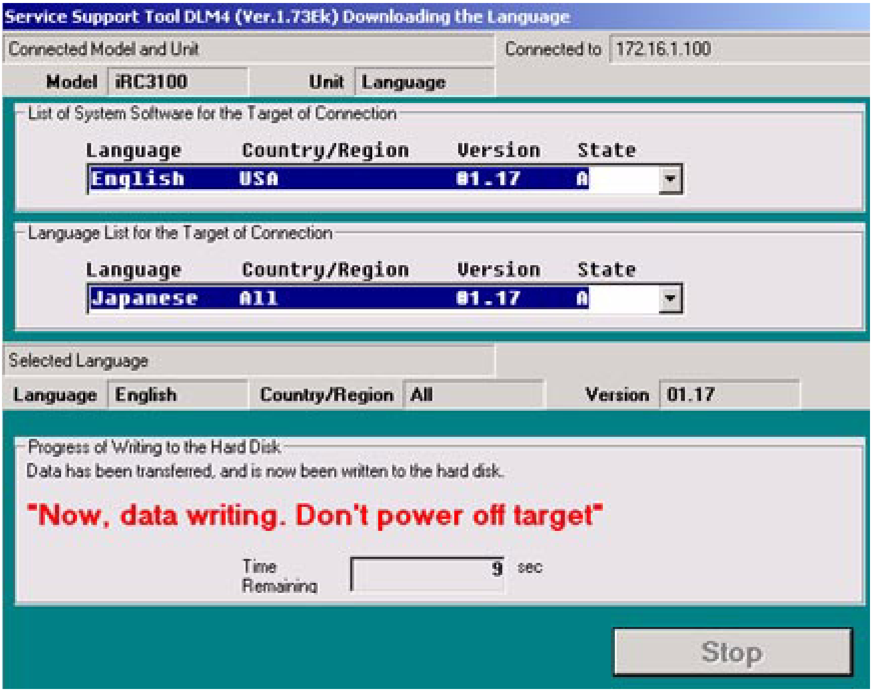
The check sums of all files have matched.

File Name	Norm...	Obtai...	Evalu...
iRC3100-XXen0118-7A02-LANG.PRG	7A02	7A02	OK

F-16-55

10) Click [To Unit Selection Screen].

Never turn off the machine while the following screen is shown.
Otherwise writing to the HDD will be suspended, preventing the machine to start up.



Service Support Tool DLM4 (Ver.1.73Ek) Downloading the Language

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100

Unit Language

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Language List for the Target of Connection

Language	Country/Region	Version	State
Japanese	All	01.17	A

Selected Language

Language English

Countiry/Region All

Version 01.17

Progress of Writing to the Hard Disk

Data has been transferred, and is now been written to the hard disk.

"Now, data writing. Don't power off target"

Time Remaining 9 sec

F-16-56

If the machine fails to start up, execute foramtting BOOTDEV using HDForamt and download the following:
System, Language, RUI

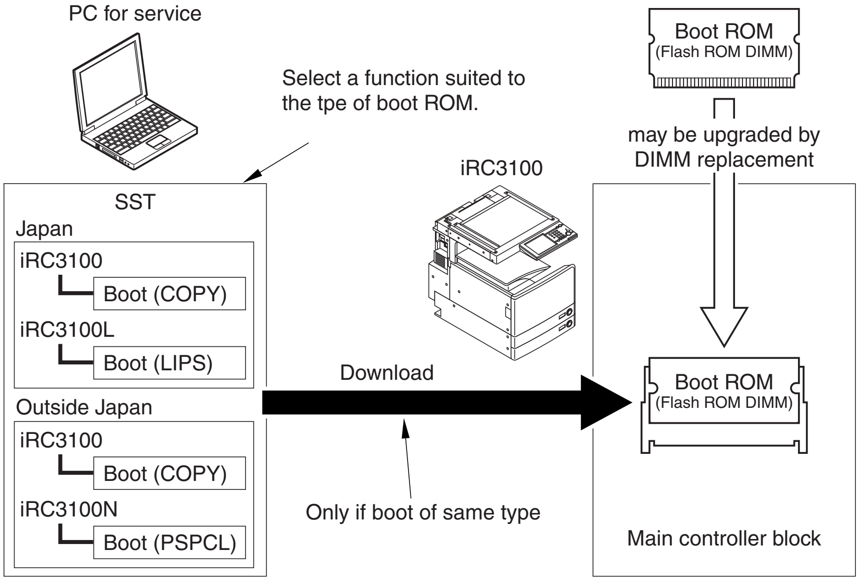
16.4.3 Downloading the BOOT Software

16.4.3.1 Outline

The boot ROM differs according to the machine's functions:

T-16-8

Boot ROM type	Service mode indication	Country	Machine function
Copy	xx.yyC	Worldwide	Copy
LIPS	xx.yyL	Japan	Copy+LIPS
PSPCL	xx.yyN	Outside Japan	Copy+PSPCL


PC for service
Select a function suited to the tpe of boot ROM.
SST
Japan
iRC3100
Boot (COPY)
iRC3100L
Boot (LIPS)
Outside Japan
iRC3100
Boot (COPY)
iRC3100N
Boot (PSPCL)
iRC3100
Download
Only if boot of same type
Boot ROM
(Flash ROM DIMM)
may be upgraded by DIMM replacement
Boot ROM
(Flash ROM DIMM)
Main controller block

F-16-57

⚠

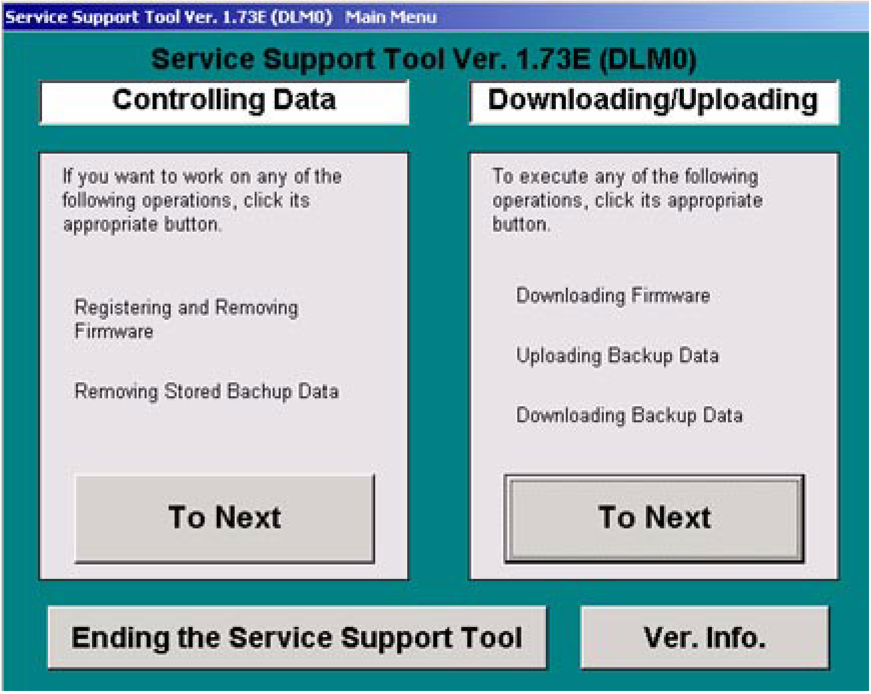
-If you fail to downloading files, you must replace the boot ROM.

-You are not required to check the type of boot ROM mounted to the machine when downloading.

16.4.3.2 Downloading Procedure

Downloading may take place in normal mode (1+7 on keypad) or in safe mode (2+8 on keypad).

1) Click [To next] under Downloading/Uploading.



Service Support Tool Ver. 1.73E (DLM0) Main Menu

Service Support Tool Ver. 1.73E (DLM0)

Controlling Data

If you want to work on any of the following operations, click its appropriate button.

Registering and Removing Firmware

Removing Stored Bachup Data

Downloading/Uploading

To execute any of the following operations, click its appropriate button.

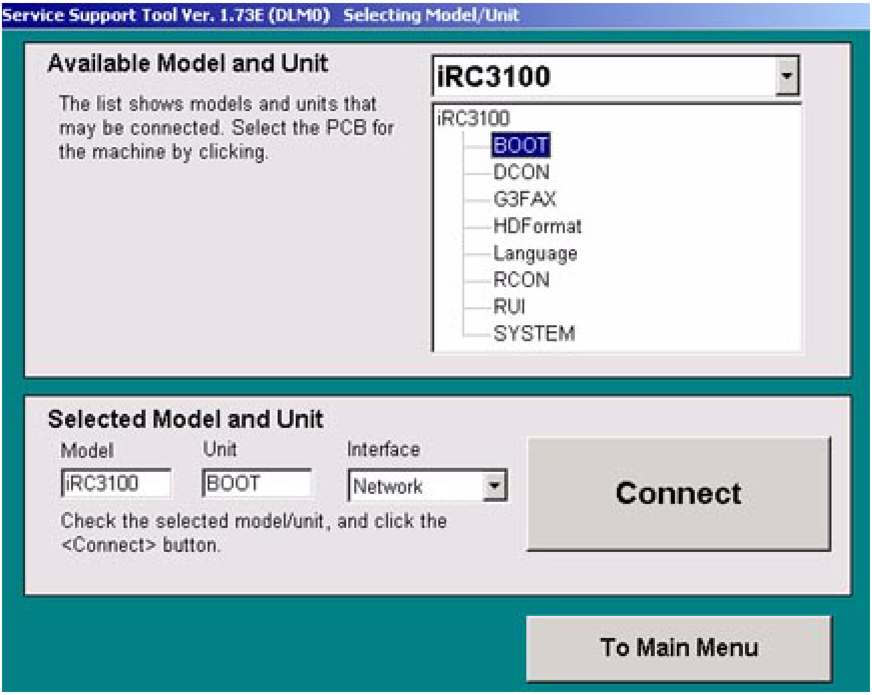
Downloading Firmware

Uploading Backup Data

Downloading Backup Data

F-16-58

2) Select [BOOT] for the iRC3100 (if a LIPS model, select iRC3100L), and click [Connect].


Service Support Tool Ver. 1.73E (DLM0) Selecting Model/Unit
iRC3100
iRC3100
BOOT
DCON
G3FAX
HDFormat
Language
RCON
RUI
SYSTEM
Connect
To Main Menu

Available Model and Unit

The list shows models and units that may be connected. Select the PCB for the machine by clicking.

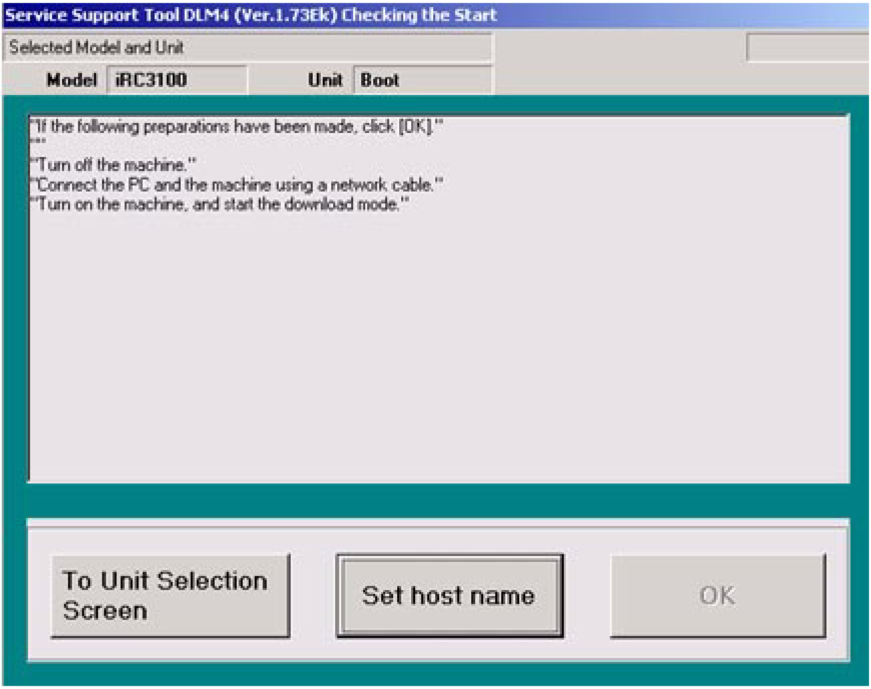
Selected Model and Unit

Model: iRC3100
Unit: BOOT
Interface: Network

Check the selected model/unit, and click the <Connect> button.

F-16-59

3) Click [Set host name].


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
To Unit Selection Screen
Set host name
OK

Selected Model and Unit

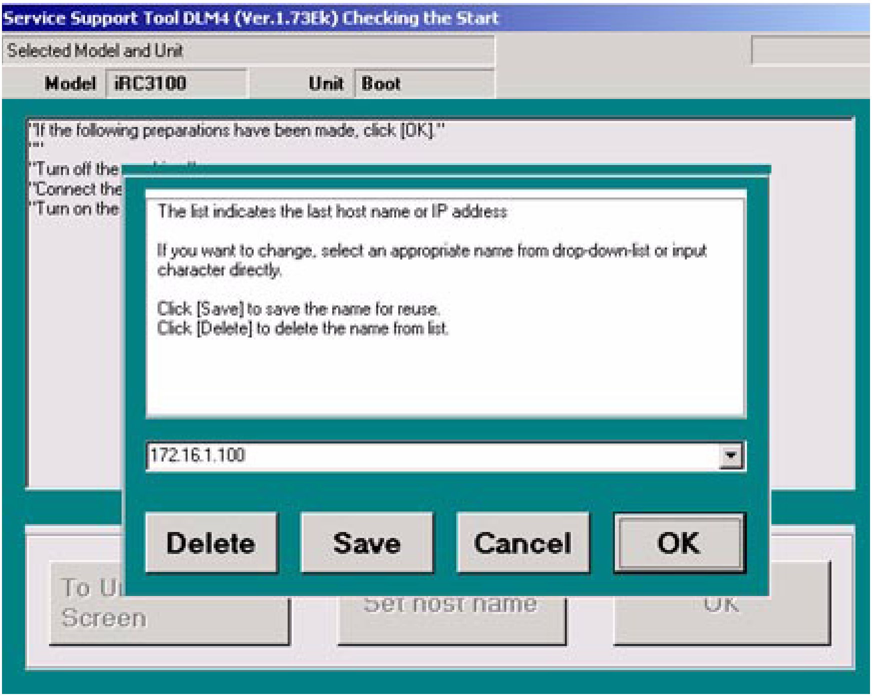
Model iRC3100

Unit Boot

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-60

4) The machine's IP address is entered automatically; click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start

Selected Model and Unit

Model iRC3100 **Unit** Boot

"If the following preparations have been made, click [OK]."
""
"Turn off the
"Connect the
"Turn on the

The list indicates the last host name or IP address

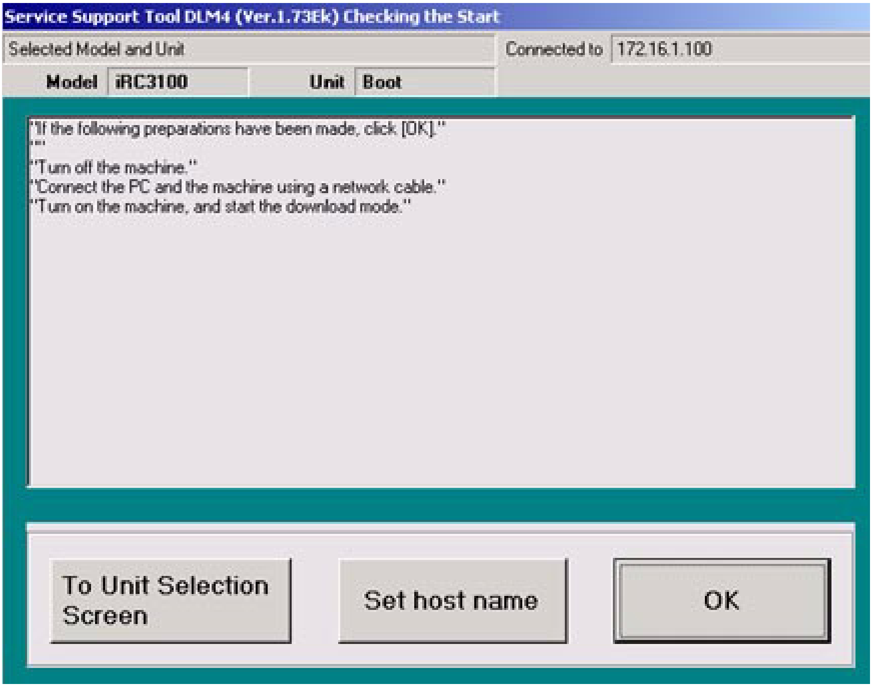
If you want to change, select an appropriate name from drop-down-list or input character directly.

Click [Save] to save the name for reuse.
Click [Delete] to delete the name from list.

172.16.1.100

F-16-61

5) Click [OK] to start connection.



Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start

Selected Model and Unit

Connected to 172.16.1.100

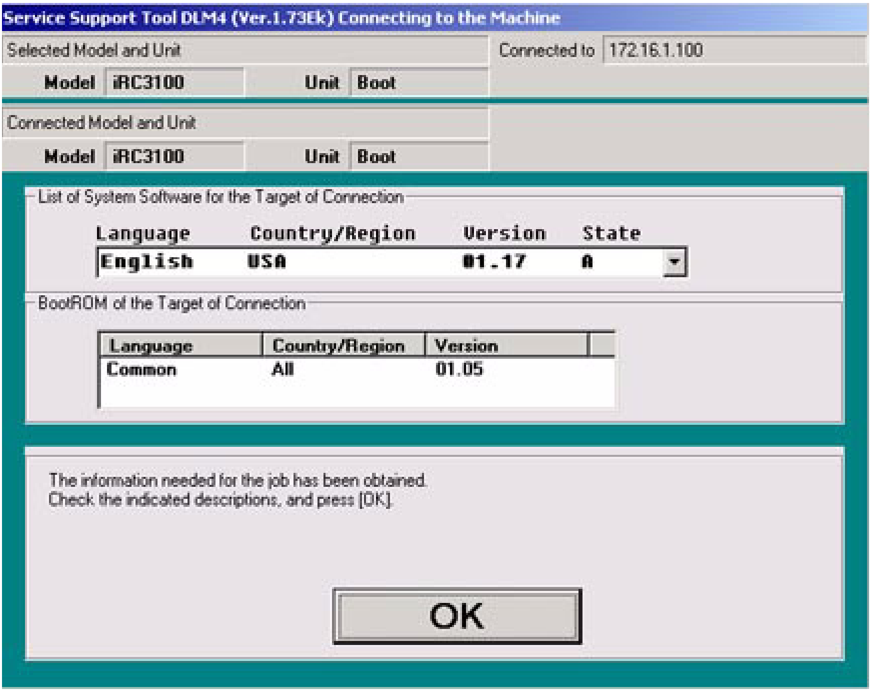
Model iRC3100

Unit Boot

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-62

6) When the machine has made a connection and brings up the following screen, click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Connecting to the Machine

Selected Model and Unit

Model: iRC3100 Unit: Boot

Connected to: 172.16.1.100

Connected Model and Unit

Model: iRC3100 Unit: Boot

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

BootROM of the Target of Connection

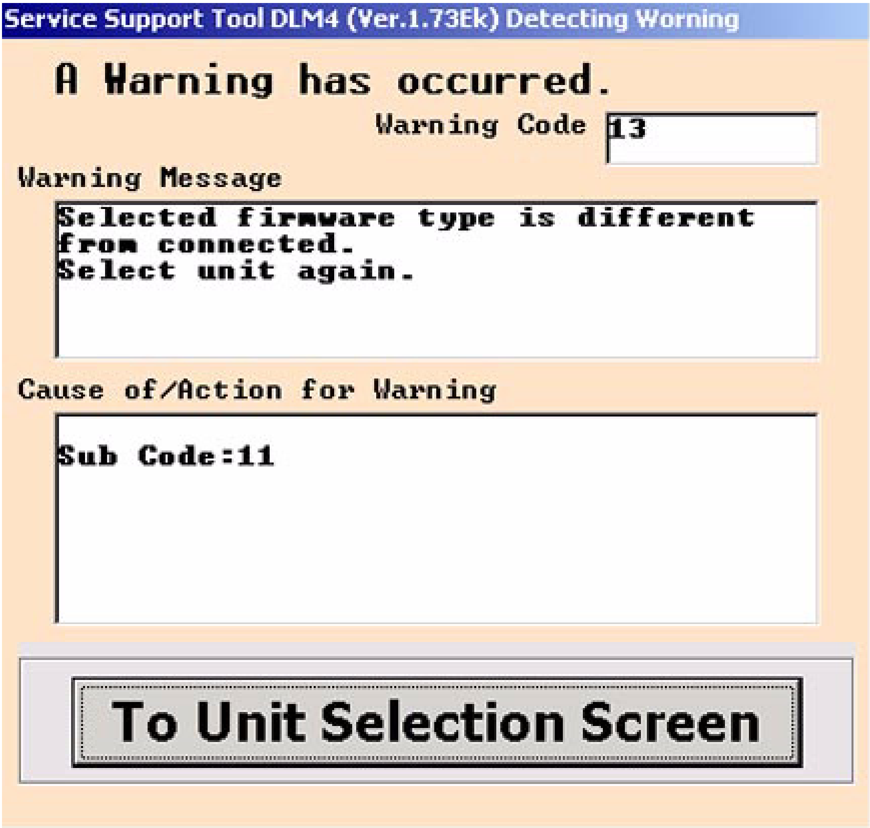
Language	Country/Region	Version
Common	All	01.05

The information needed for the job has been obtained.
Check the indicated descriptions, and press [OK].

F-16-63

⚠

If the wrong type of boot ROM has been selected, the following screen will appear; select the correct model:


Service Support Tool DLM4 (Ver.1.73Ek) Detecting Worning
A Warning has occurred.
Warning Code
Warning Message
Cause of/Action for Warning
To Unit Selection Screen

Warning Code: 13

Warning Message:

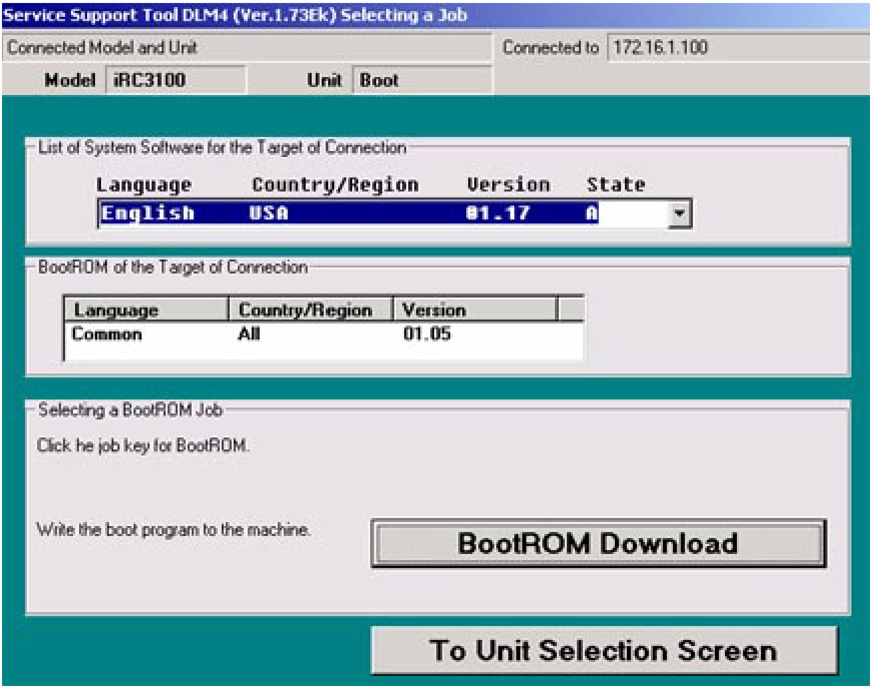
Selected firmware type is different from connected.
Select unit again.

Cause of/Action for Warning:

Sub Code:11

F-16-64

7) Click [BootROM Download].



Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Job

Connected Model and Unit

Model iRC3100 Unit Boot

Connected to 172.16.1.100

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

BootROM of the Target of Connection

Language	Country/Region	Version
Common	All	01.05

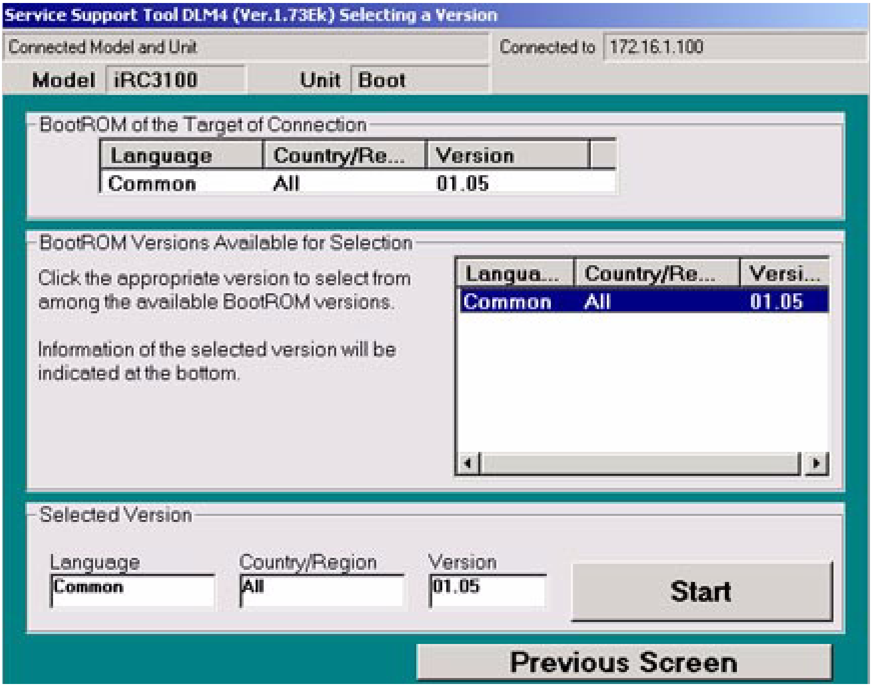
Selecting a BootROM Job

Click he job key for BootROM.

Write the boot program to the machine.

F-16-65

8) Select the version to download, and click [Start].



Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Version

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100

Unit Boot

BootROM of the Target of Connection

Language	Country/Re...	Version
Common	All	01.05

BootROM Versions Available for Selection

Click the appropriate version to select from among the available BootROM versions.

Information of the selected version will be indicated at the bottom.

Langua...	Country/Re...	Versi...
Common	All	01.05

Selected Version

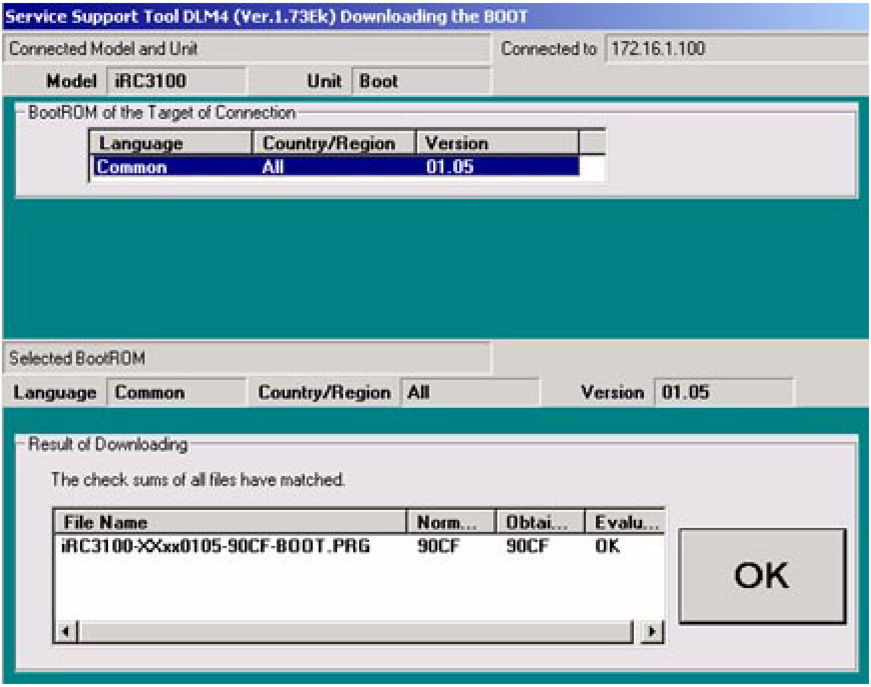
Language: Common

Country/Region: All

Version: 01.05

F-16-66

9) When the results of the downloading are indicated, and click [OK].


Service Support Tool DLM4 (Ver.1.73Ek) Downloading the BOOT

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100

Unit Boot

BootROM of the Target of Connection

Language	Country/Region	Version
Common	All	01.05

Selected BootROM

Language Common

Country/Region All

Version 01.05

Result of Downloading

The check sums of all files have matched.

File Name	Norm...	Obtai...	Evalu...
iRC3100-XXxx0105-90CF-BOOT.PRG	90CF	90CF	OK

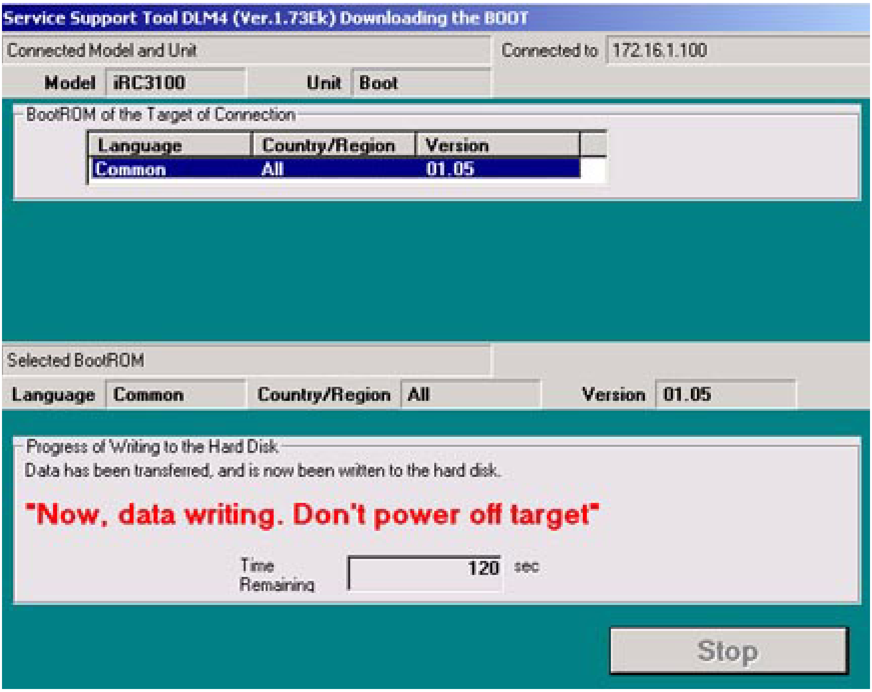
F-16-67

10) Click [To Unit Selection Screen].

[after Downloading]

When you upgrade the boot ROM, be sure to turn off and then on the machine's main power switch so that the new version will be validated.

Never turn off the machine while the following screen is shown.
Otherwise writing to the HDD will be suspended, preventing the machine to start up.



Service Support Tool DLM4 (Ver.1.73Ek) Downloading the BOOT

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100

Unit Boot

BootROM of the Target of Connection

Language	Country/Region	Version
Common	All	01.05

Selected BootROM

Language Common

Country/Region All

Version 01.05

Progress of Writing to the Hard Disk

Data has been transfered, and is now been witten to the hard disk.

"Now, data writing. Don't power off target"

Time Remaining 120 sec

F-16-68

If the machine fails to start up, replace the boot ROM.

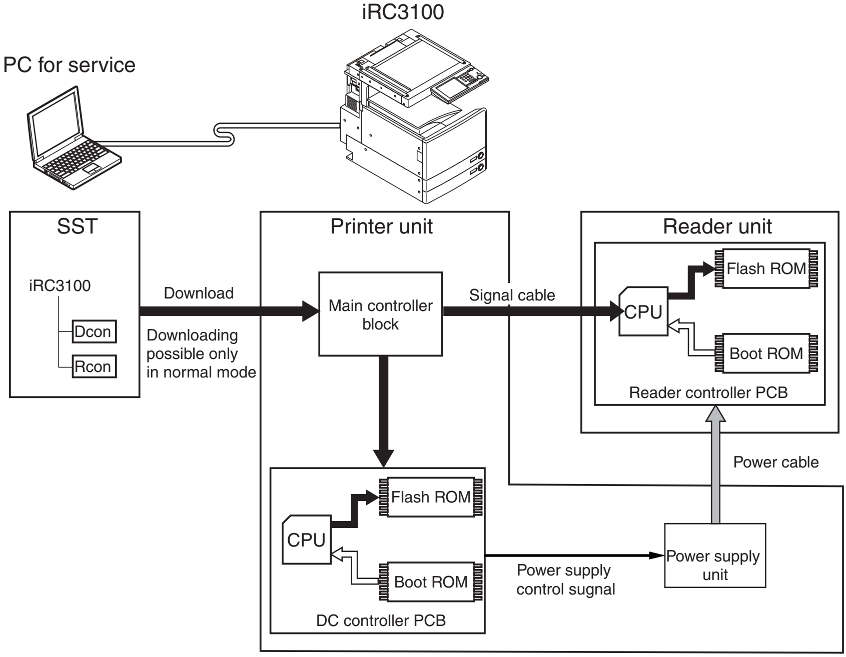
16.4.4 Downloading the Dcon and Rcon Software

16.4.4.1 Outline

The DC controller/Reader controller files are downloaded by way of the main controller block.

⚠

Both DC controller PCB and the Reader controller PCB are wquipped with booy ROMs, permitting retries if downloading fails.


iRC3100
PC for service
SST
iRC3100
Dcon
Rcon
Download
Downloading possible only in normal mode
Printer unit
Main controller block
Signal cable
Reader unit
CPU
Flash ROM
Boot ROM
Reader controller PCB
Power cable
CPU
Flash ROM
Boot ROM
DC controller PCB
Power supply control sugnal
Power supply unit

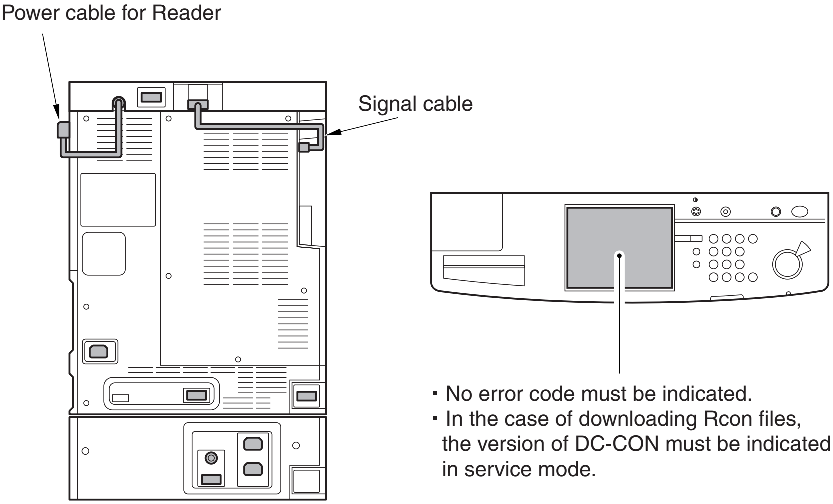
F-16-69

⚠

Unless the DC controller has started up normally, not permitting downloading of Reader controller files.
(Because the power supply control signal will not be validated, not supplying the reader unit with power.)

16.4.4.2 Downloading Procedure

[Making Checks in Advance]



- No error code must be indicated.
- In the case of downloading Rcon files, the version of DC-CON must be indicated in service mode.

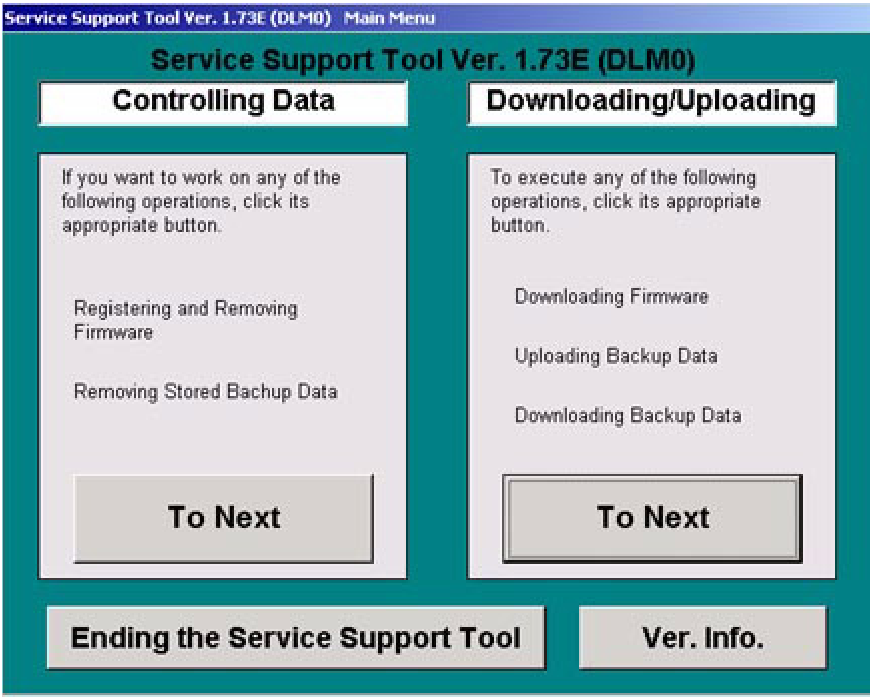
F-16-70

[Procedure]

The following describes downloading of DC controller files.

Both DC controller and Reader controller files are common among models.

1) Click [To next] under Downloading/Uploading.


Service Support Tool Ver. 1.73E (DLM0) Main Menu
Service Support Tool Ver. 1.73E (DLM0)
Controlling Data
Downloading/Uploading

If you want to work on any of the following operations, click its appropriate button.

Registering and Removing Firmware

Removing Stored Bachup Data

To execute any of the following operations, click its appropriate button.

Downloading Firmware

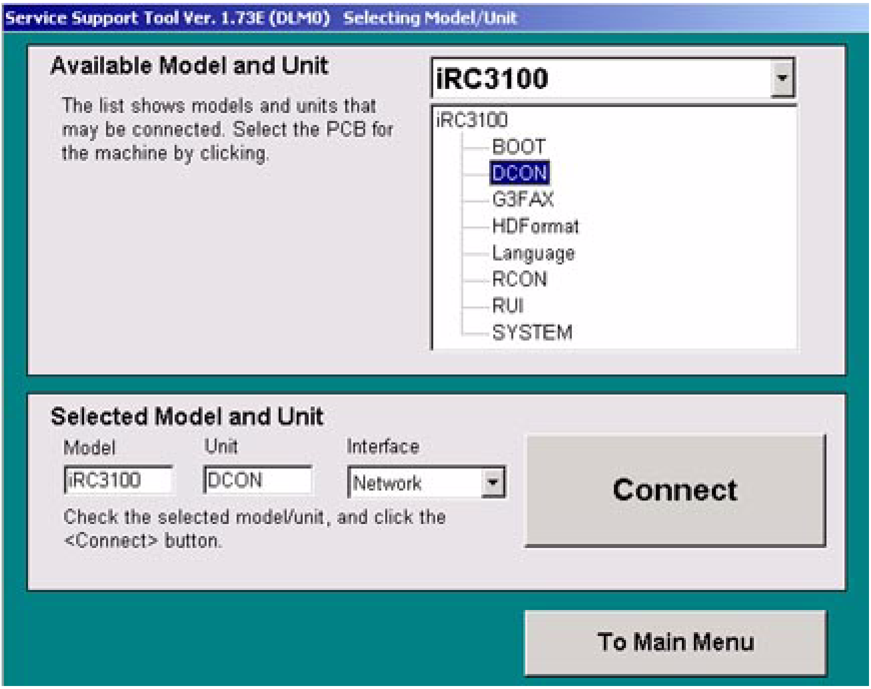
Uploading Backup Data

Downloading Backup Data

To Next
To Next
Ending the Service Support Tool
Ver. Info.

F-16-71

2) Select [DCON], and click [Connect].


Service Support Tool Ver. 1.73E (DLM0) Selecting Model/Unit

Available Model and Unit

The list shows models and units that may be connected. Select the PCB for the machine by clicking.

iRC3100
iRC3100
BOOT
DCON
G3FAX
HDFormat
Language
RCON
RUI
SYSTEM

Selected Model and Unit

Model: iRC3100

Unit: DCON

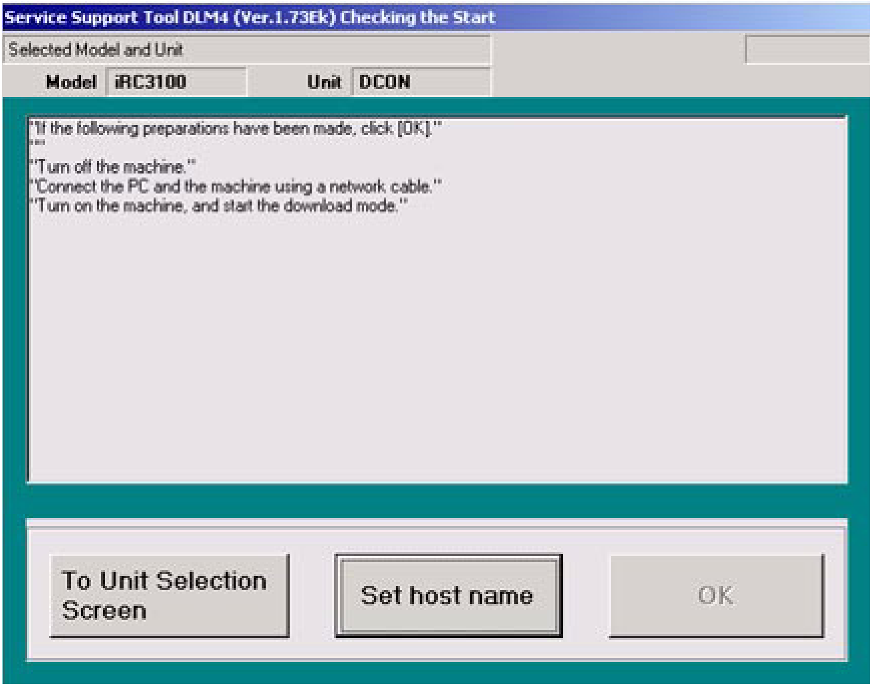
Interface: Network

Check the selected model/unit, and click the <Connect> button.

Connect
To Main Menu

F-16-72

3) Click [Set host name].


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Model
Unit
To Unit Selection Screen
Set host name
OK

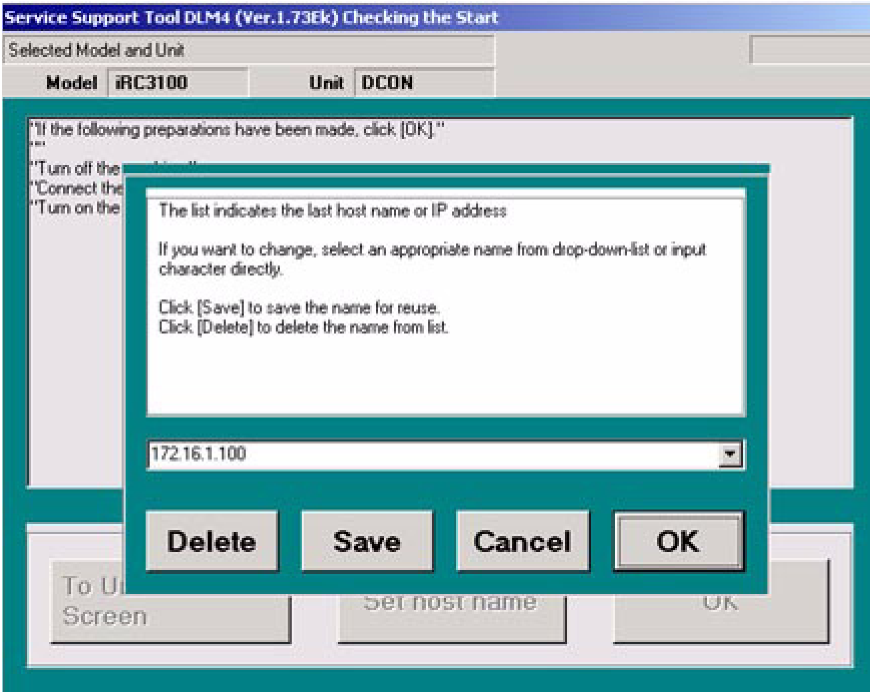
Model: iRC3100

Unit: DCON

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-73

4) The machine's IP address is entered automatically; click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start

Selected Model and Unit

Model iRC3100 Unit DCON

"If the following preparations have been made, click [OK]."

"Turn off the

"Connect the

"Turn on the

The list indicates the last host name or IP address

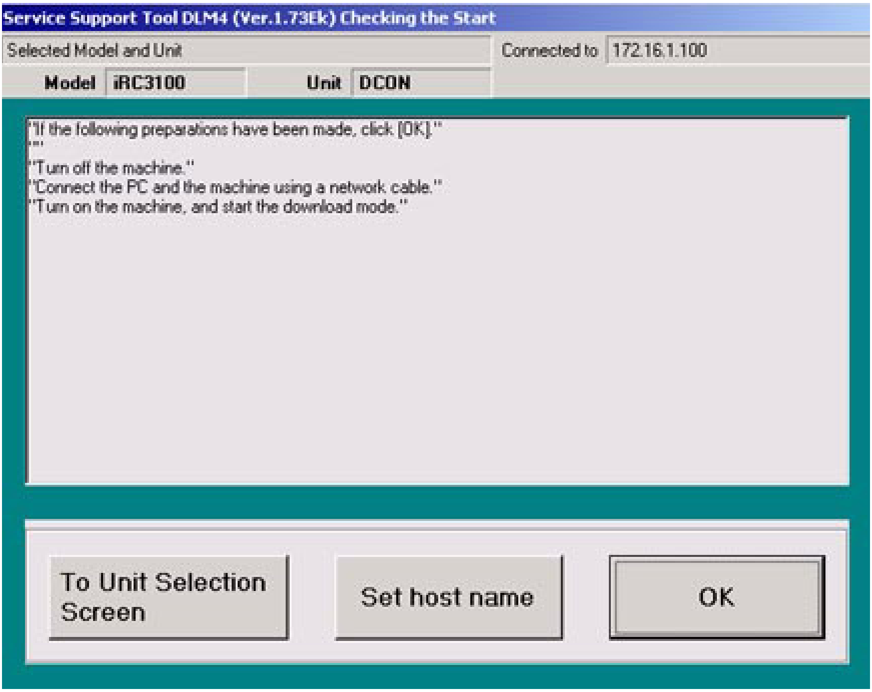
If you want to change, select an appropriate name from drop-down-list or input character directly.

Click [Save] to save the name for reuse.
Click [Delete] to delete the name from list.

172.16.1.100

F-16-74

5) Click [OK] to start connection.


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Connected to
Model
Unit
To Unit Selection Screen
Set host name
OK

172.16.1.100

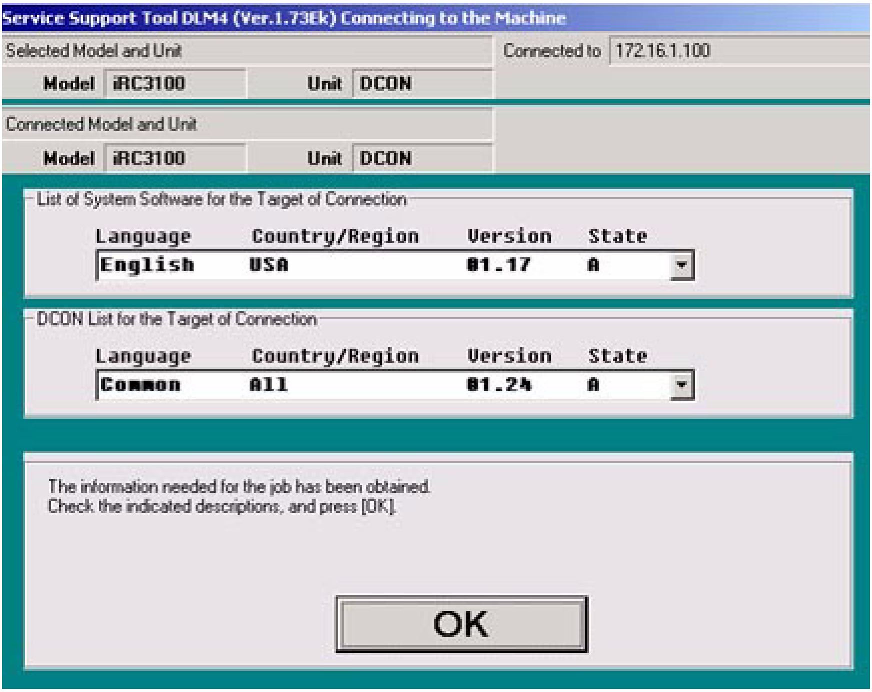
iRC3100

DCON

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-75

6) When the machine has made a connection and brings up the following screen, click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Connecting to the Machine

Selected Model and Unit

Model: iRC3100 Unit: DCON

Connected to: 172.16.1.100

Connected Model and Unit

Model: iRC3100 Unit: DCON

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

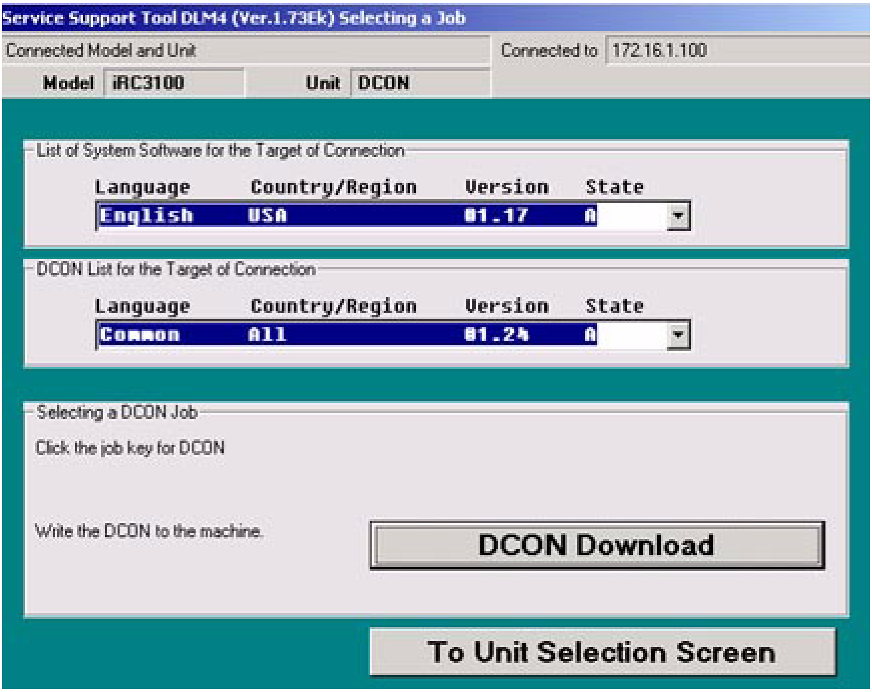
DCON List for the Target of Connection

Language	Country/Region	Version	State
Common	All	01.24	A

The information needed for the job has been obtained.
Check the indicated descriptions, and press [OK].

F-16-76

7) Click [DCON Download].



Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Job

Connected Model and Unit

Model: iRC3100 Unit: DCON

Connected to: 172.16.1.100

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

DCON List for the Target of Connection

Language	Country/Region	Version	State
Common	All	01.24	A

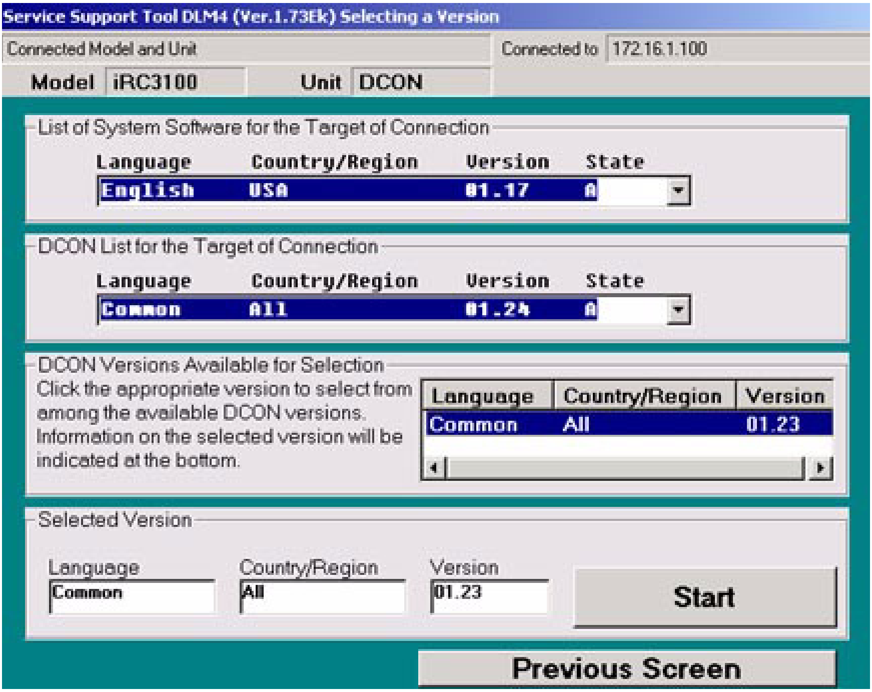
Selecting a DCON Job

Click the job key for DCON

Write the DCON to the machine.

F-16-77

8) Select the version to download, and click [Start].



Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Version

Connected Model and Unit

Connected to: 172.16.1.100

Model: iRC3100

Unit: DCON

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

DCON List for the Target of Connection

Language	Country/Region	Version	State
Common	All	01.24	A

DCON Versions Available for Selection

Click the appropriate version to select from among the available DCON versions. Information on the selected version will be indicated at the bottom.

Language	Country/Region	Version
Common	All	01.23

Selected Version

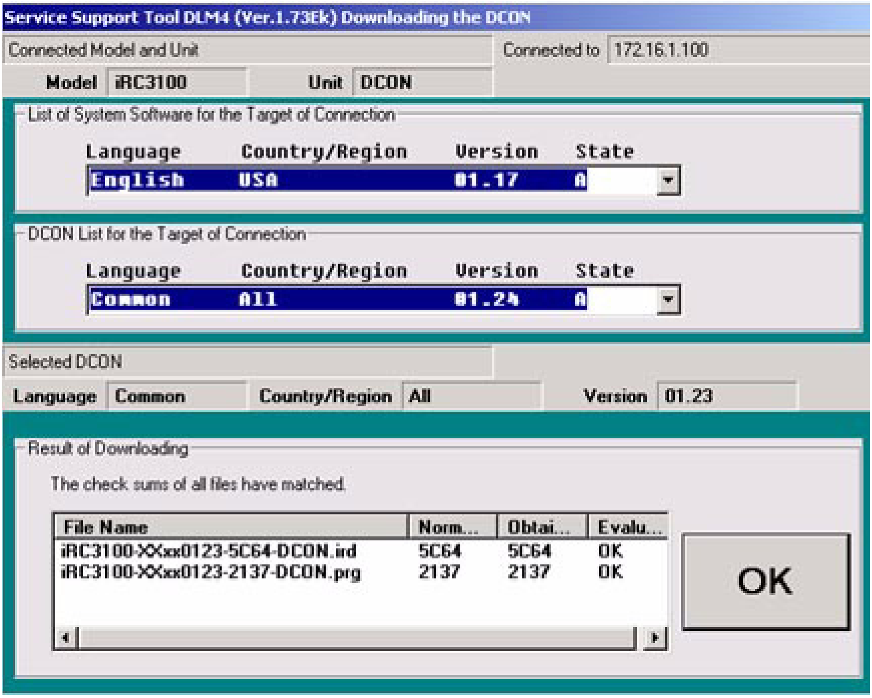
Language: Common

Country/Region: All

Version: 01.23

F-16-78

9) When the results of the downloading are indicated, and click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Downloading the DCON

Connected Model and Unit

Model iRC3100 Unit DCON

Connected to 172.16.1.100

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

DCON List for the Target of Connection

Language	Country/Region	Version	State
Common	All	01.24	A

Selected DCON

Language Common Country/Region All Version 01.23

Result of Downloading

The check sums of all files have matched.

File Name	Norm...	Obtai...	Evalu...
iRC3100-XXxx0123-5C64-DCON.ird	5C64	5C64	OK
iRC3100-XXxx0123-2137-DCON.prg	2137	2137	OK

F-16-79

10) Click [To Unit Selection Screen].

[after Downloading]

When you have downloaded DC controller or Reader controller files, be sure to turn off and then on the machine's main power switch.

⚠You cannot download the DC controller and Reader controller files in succession.

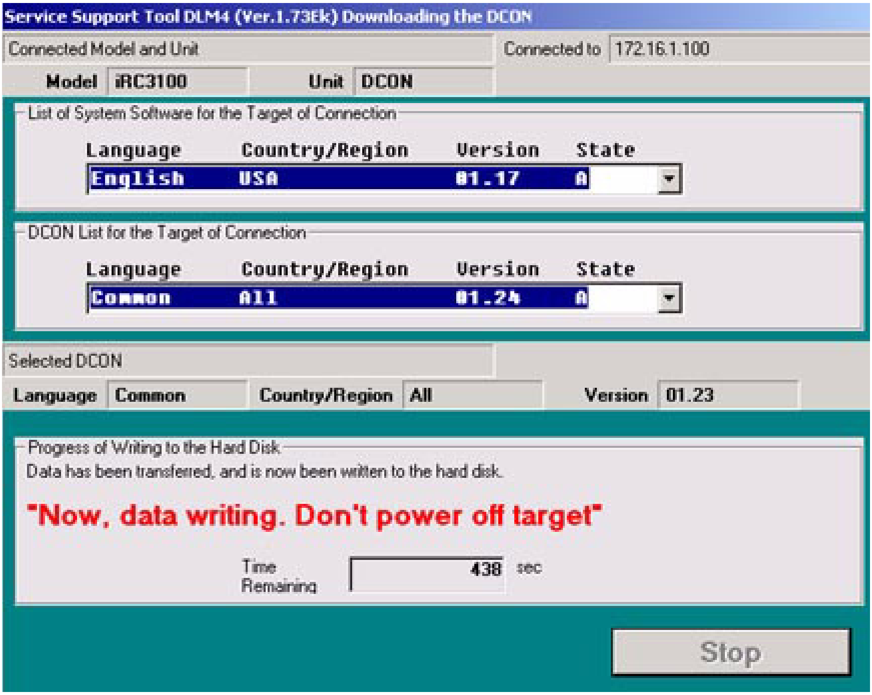
⚠

Never turn off the machine while the following screen is shown.

Otherwise, writing to `DCON/RCON' can fail, indicated by the error code.

DCON: E733

RCON: E732



Service Support Tool DLM4 (Ver.1.73Ek) Downloading the DCON

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100 Unit DCON

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

DCON List for the Target of Connection

Language	Country/Region	Version	State
Common	All	01.24	A

Selected DCON

Language Common Country/Region All Version 01.23

Progress of Writing to the Hard Disk

Data has been transferred, and is now been written to the hard disk.

"Now, data writing. Don't power off target"

Time Remaining 438 sec

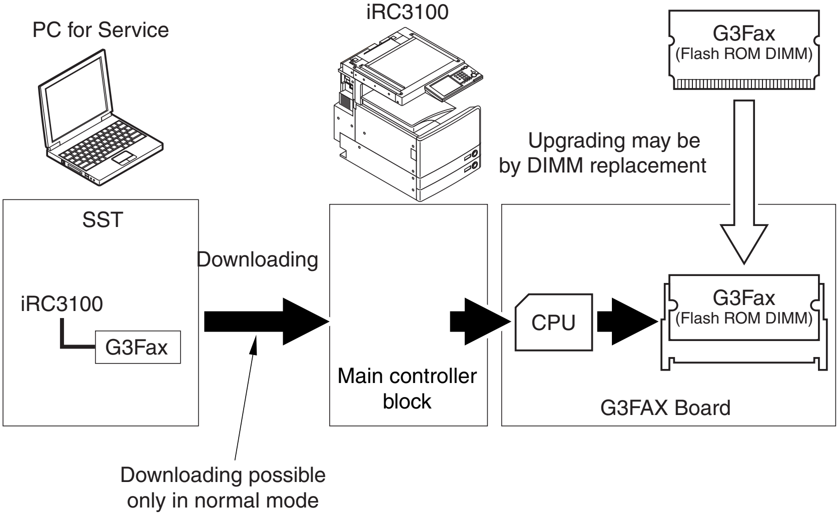
F-16-80

If an error code is indicated, be sure to download the appropriate system software.

16.4.5 Downloading the G3 FAX Software

16.4.5.1 Outline

The G3fax files are downloaded by way of the main controller block.


PC for Service
iRC3100
G3Fax
(Flash ROM DIMM)
Upgrading may be by DIMM replacement
SST
Downloading
iRC3100
G3Fax
CPU
G3Fax
(Flash ROM DIMM)
Main controller block
G3FAX Board
Downloading possible only in normal mode

F-16-81

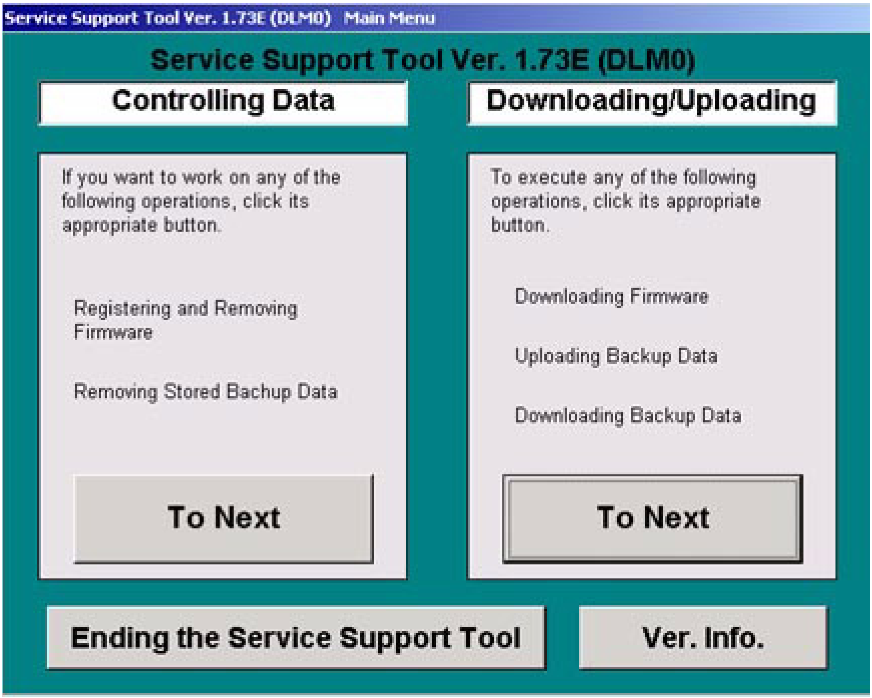
⚠

If downloading fails, the flash ROM DIMM must be replaced.

16.4.5.2 Downloading Procedure

[Procedure]
Use normal mode for downloading.

1) Click [To next] under Downloading/Uploading.


Service Support Tool Ver. 1.73E (DLM0)   Main Menu

Service Support Tool Ver. 1.73E (DLM0)

Controlling Data

If you want to work on any of the following operations, click its appropriate button.

Registering and Removing Firmware

Removing Stored Bachup Data

Downloading/Uploading

To execute any of the following operations, click its appropriate button.

Downloading Firmware

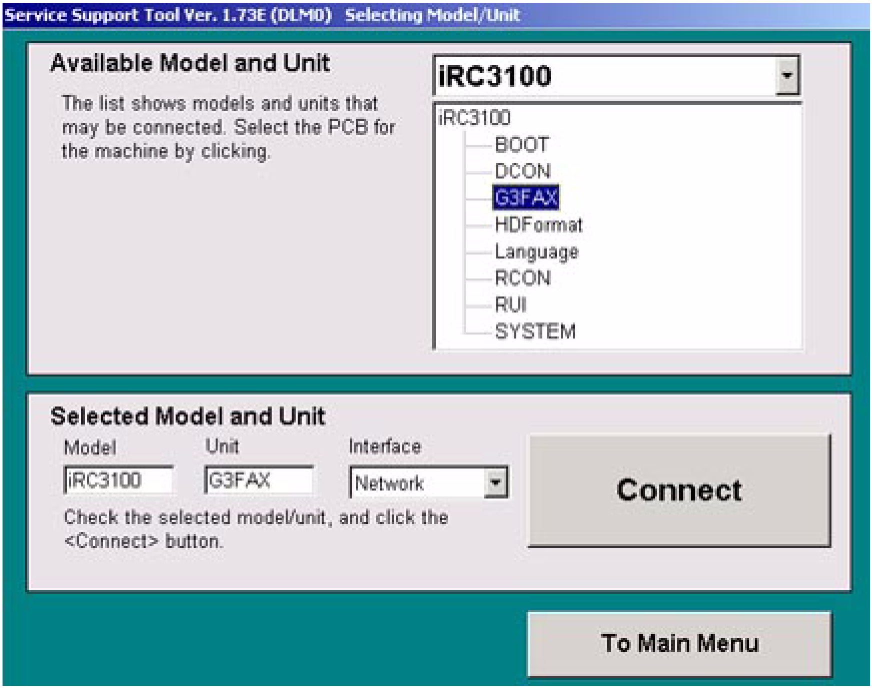
Uploading Backup Data

Downloading Backup Data

To Next
To Next
Ending the Service Support Tool
Ver. Info.

F-16-82

2) Select [G3FAX], and click [Connect].


Service Support Tool Ver. 1.73E (DLM0) Selecting Model/Unit
Available Model and Unit
iRC3100
iRC3100
BOOT
DCON
G3FAX
HDFormat
Language
RCON
RUI
SYSTEM
Selected Model and Unit
Connect
To Main Menu

The list shows models and units that may be connected. Select the PCB for the machine by clicking.

Model: iRC3100

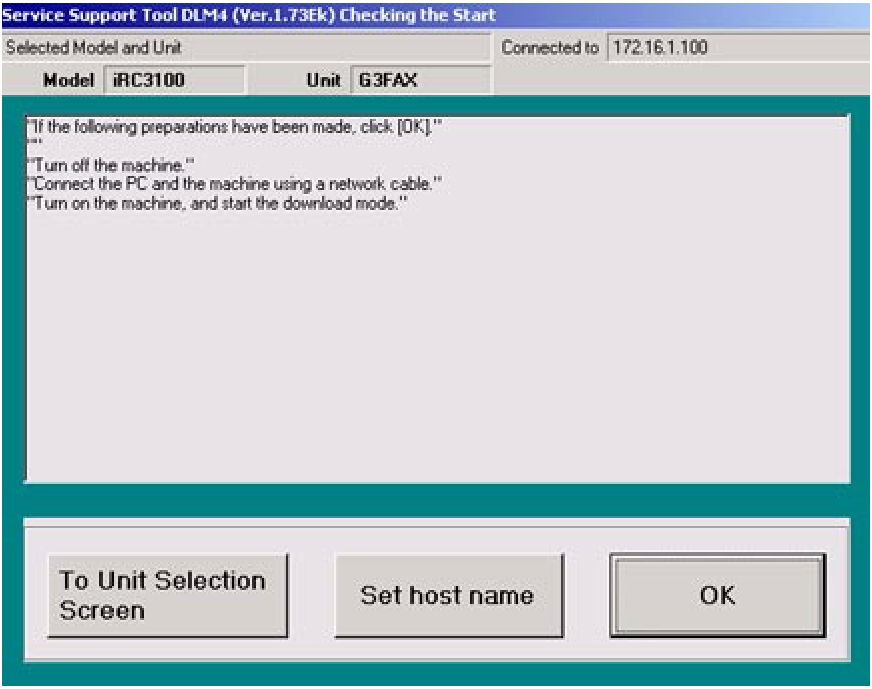
Unit: G3FAX

Interface: Network

Check the selected model/unit, and click the <Connect> button.

F-16-83

3) Click [Set host name].


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
To Unit Selection Screen
Set host name
OK

Connected to 172.16.1.100

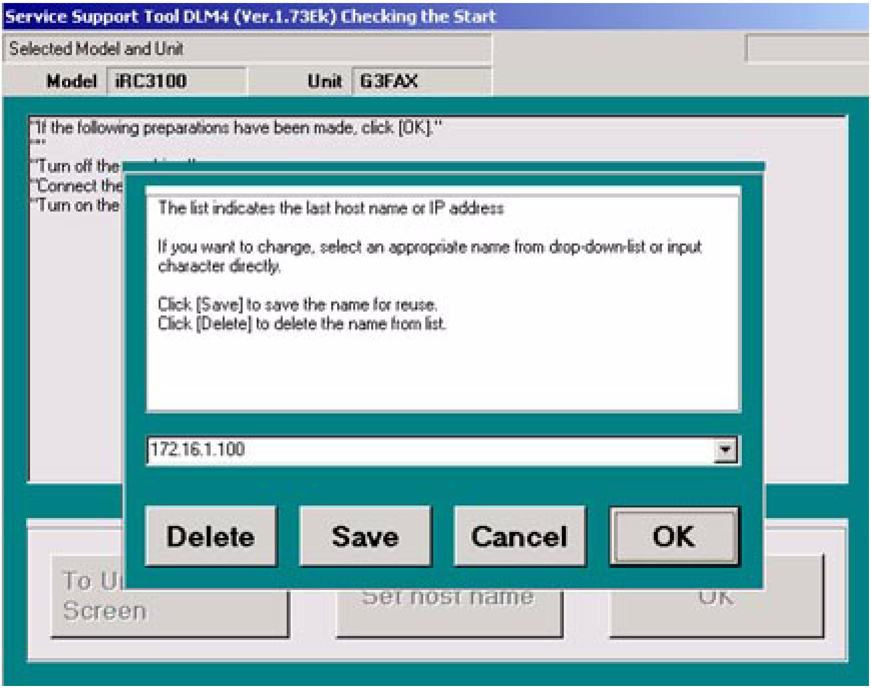
Model iRC3100

Unit G3FAX

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-84

4) The machine's IP address is entered automatically; click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start

Selected Model and Unit

Model iRC3100 **Unit** G3FAX

"If the following preparations have been made, click [OK]."
"*"
"Turn off the
"Connect the
"Turn on the

The list indicates the last host name or IP address

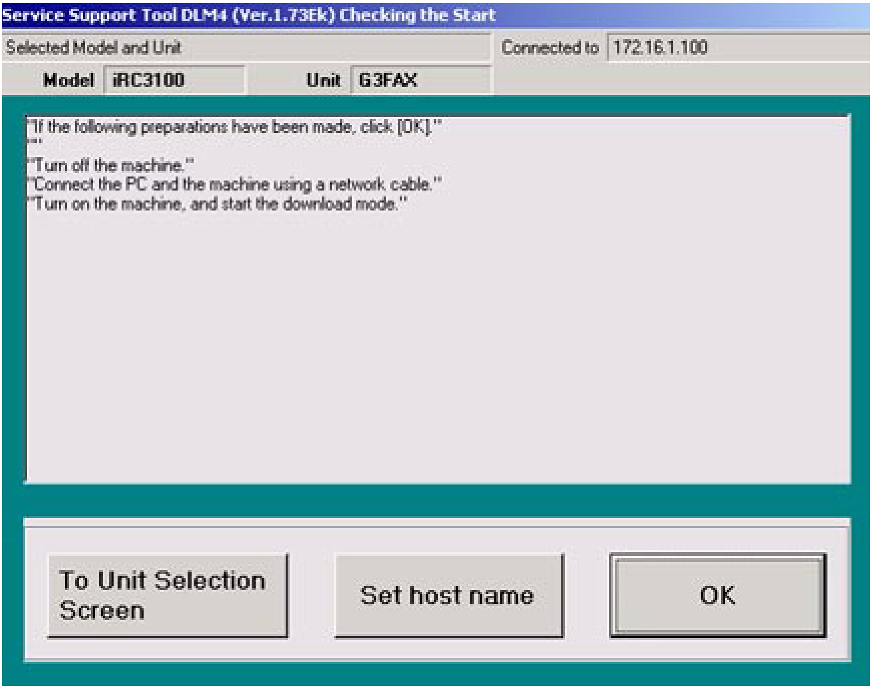
If you want to change, select an appropriate name from drop-down-list or input character directly.

Click [Save] to save the name for reuse.
Click [Delete] to delete the name from list.

172.16.1.100

F-16-85

5) Click [OK] to start connection.


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Connected to
Model
Unit
To Unit Selection Screen
Set host name
OK

Connected to 172.16.1.100

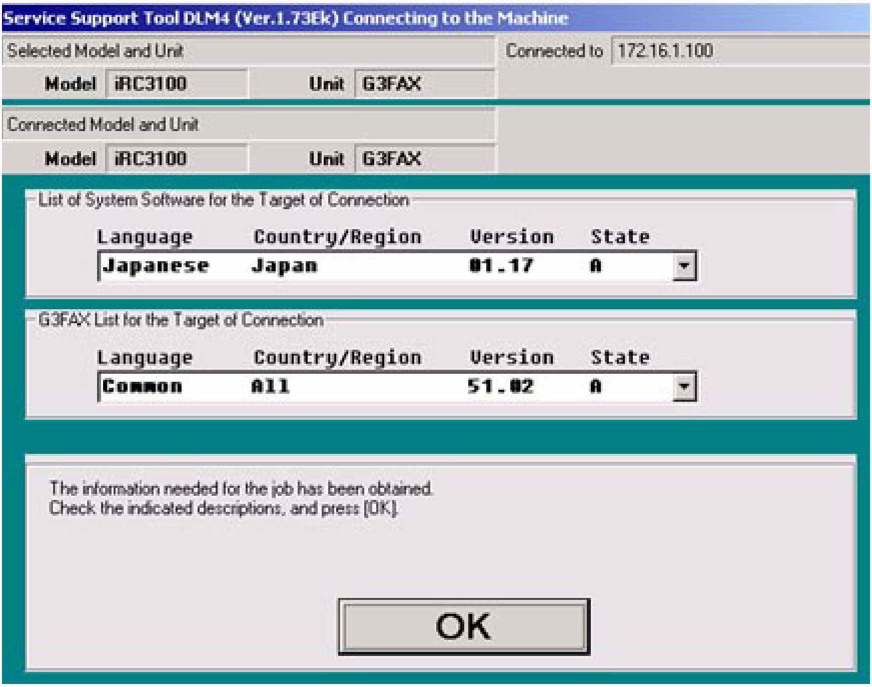
Model iRC3100

Unit G3FAX

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-86

6) When the machine has made a connection and brings up the following screen, click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Connecting to the Machine

Selected Model and Unit

Model: iRC3100 Unit: G3FAX

Connected to: 172.16.1.100

Connected Model and Unit

Model: iRC3100 Unit: G3FAX

List of System Software for the Target of Connection

Language	Country/Region	Version	State
Japanese	Japan	01.17	A

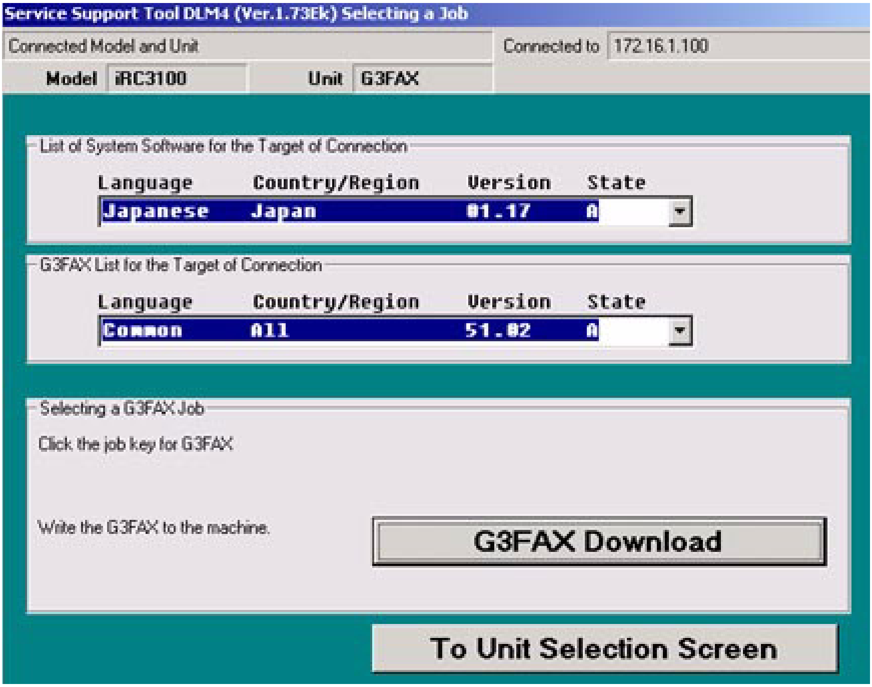
G3FAX List for the Target of Connection

Language	Country/Region	Version	State
Common	All	51.02	A

The information needed for the job has been obtained.
Check the indicated descriptions, and press [OK].

F-16-87

7) Click [G3FAX Download].



Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Job

Connected Model and Unit

Model: iRC3100

Unit: G3FAX

Connected to: 172.16.1.100

List of System Software for the Target of Connection

Language	Country/Region	Version	State
Japanese	Japan	01.17	A

G3FAX List for the Target of Connection

Language	Country/Region	Version	State
Common	All	51.02	A

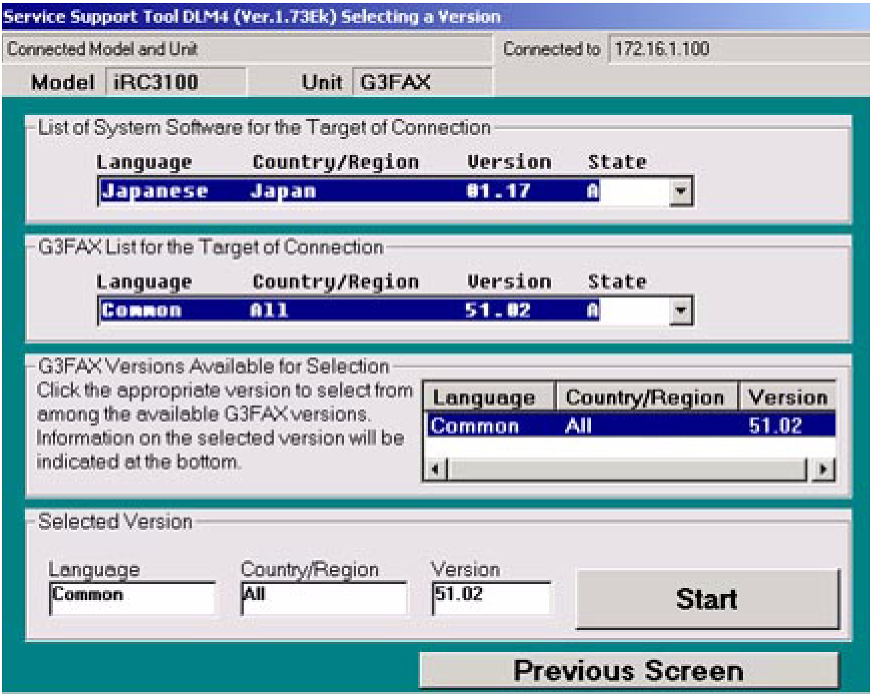
Selecting a G3FAX Job

Click the job key for G3FAX

Write the G3FAX to the machine.

F-16-88

8) Select the version to download, and click [Start].



Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Version

Connected Model and Unit

Model: iRC3100

Unit: G3FAX

Connected to: 172.16.1.100

List of System Software for the Target of Connection

Language	Country/Region	Version	State
Japanese	Japan	01.17	A

G3FAX List for the Target of Connection

Language	Country/Region	Version	State
Common	All	51.02	A

G3FAX Versions Available for Selection

Click the appropriate version to select from among the available G3FAX versions. Information on the selected version will be indicated at the bottom.

Language	Country/Region	Version
Common	All	51.02

Selected Version

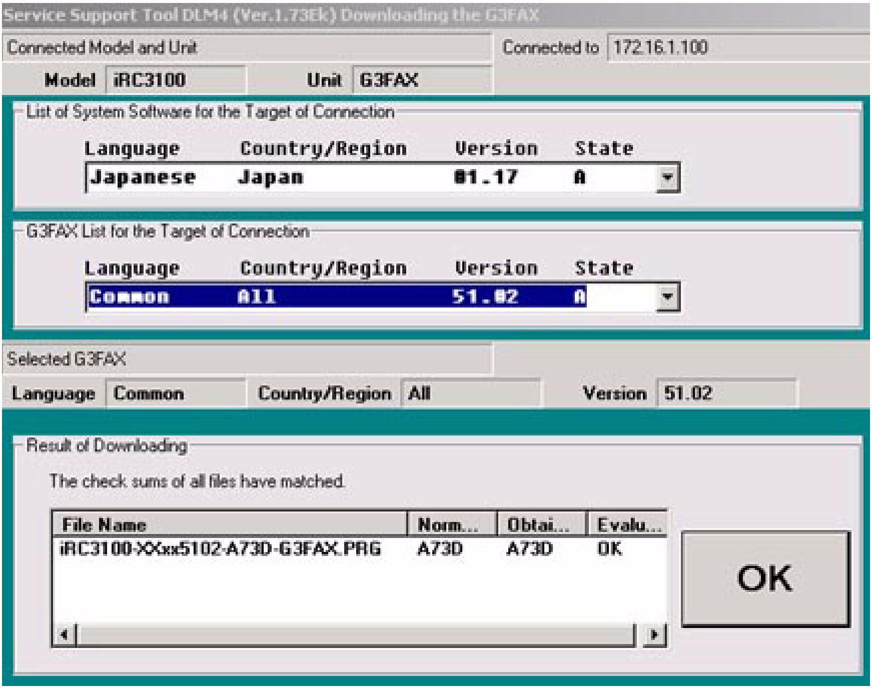
Language: Common

Country/Region: All

Version: 51.02

F-16-89

9) When the results of the downloading are indicated, and click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Downloading the G3FAX

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100 Unit G3FAX

List of System Software for the Target of Connection

Language	Country/Region	Version	State
Japanese	Japan	01.17	A

G3FAX List for the Target of Connection

Language	Country/Region	Version	State
Common	All	51.02	A

Selected G3FAX

Language Common Country/Region All Version 51.02

Result of Downloading

The check sums of all files have matched.

File Name	Norm...	Obtai...	Evalu...
iRC3100-XXxx5102-A73D-G3FAX.PRG	A73D	A73D	OK

F-16-90

10) Click [To Unit Selection Screen].

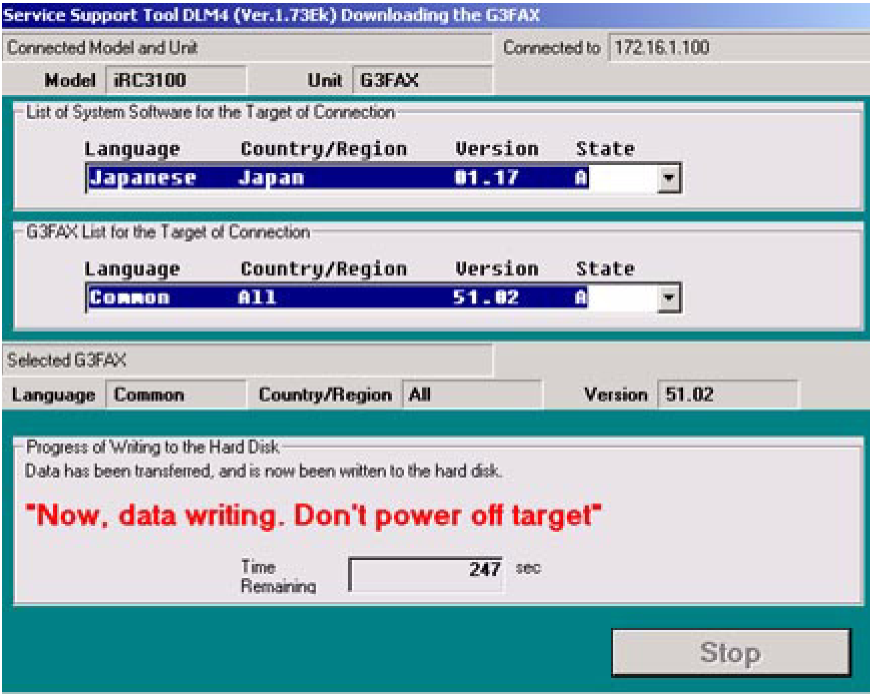
[after Downloading]

When you have downloaded G3FAX filess, be sure to turn off and then on the machine's main power switch.

⚠

You cannnot download G3FAX files twice in succession.
(Once downloading ends, the G3FAX board will be reset, leaving download mode.)

Never turn off the machine while the following screen is shown.
Writing to the flash ROM DIMM of the G3 fax board will fail, preventing the G3FAX board functions from operating normally.



Service Support Tool DLM4 (Ver.1.73Ek) Downloading the G3FAX

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100 Unit G3FAX

List of System Software for the Target of Connection

Language	Country/Region	Version	State
Japanese	Japan	01.17	A

G3FAX List for the Target of Connection

Language	Country/Region	Version	State
Common	All	51.02	A

Selected G3FAX

Language Common Country/Region All Version 51.02

Progress of Writing to the Hard Disk

Data has been transferred, and is now been written to the hard disk.

"Now, data writing. Don't power off target"

Time Remaining 247 sec

F-16-91

If the G3fax board fails to operate, be sure to replace the flash ROM DIMM onthe G3fax board.

16.5 Uploading and Downloading Backup Data

16.5.1 Outline

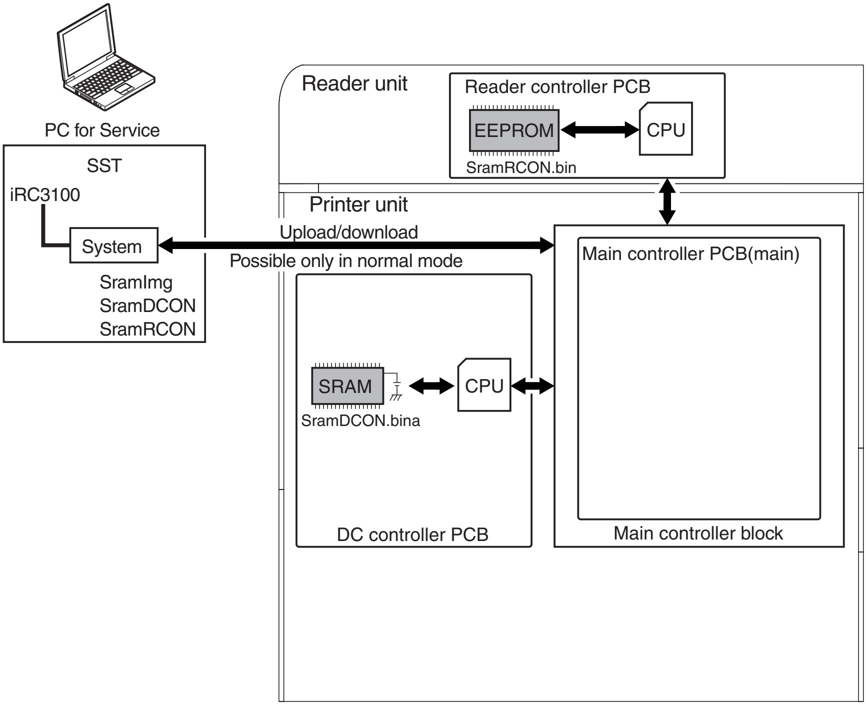
The machine's backup data is stored on the SRAM, DC controller PCB, and Reader controller PCB.
Any backup data is selected with reference to its file name used when uploading it.

T-16-9

Backup data	File name selected at time of uploading
DC controller PCB	SramDCON.bin
Reder controller PCB	SramRCON.bin
For R&D	SramImg.bin

⚠

-Be sure not to download or upload the [SramImg.bin] in the field.
-When replacing the DC controller PCB or the Reder controller PCB, it is a good idea to upload its data in advance, and download it after replacement so that parts counter reading and the like may be retained.


PC for Service
SST
iRC3100
System
SramImg
SramDCON
SramRCON
Reader unit
Reader controller PCB
EEPROM
CPU
SramRCON.bin
Printer unit
Upload/download
Possible only in normal mode
Main controller PCB(main)
SRAM
SramDCON.bina
CPU
DC controller PCB
Main controller block

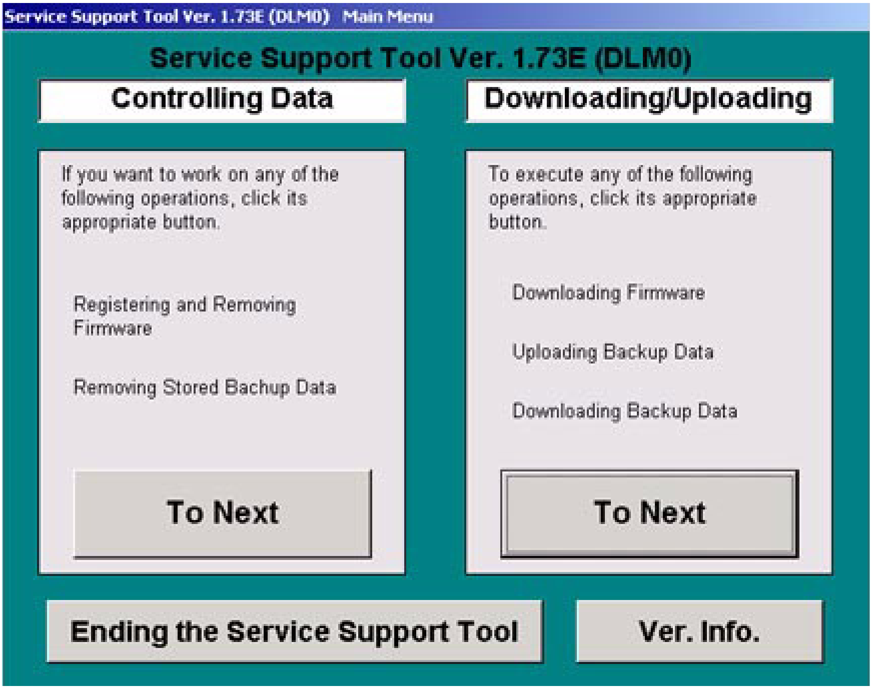
F-16-92

16.5.2 Uploading Procedure

[Procedure]

Use normal mode (Power ON 1+7 on keypad) for uploading.

1) Click the [To Next] under Downloading/Uploading.



Service Support Tool Ver. 1.73E (DLM0) Main Menu

Service Support Tool Ver. 1.73E (DLM0)

Controlling Data

If you want to work on any of the following operations, click its appropriate button.

Registering and Removing Firmware

Removing Stored Bachup Data

Downloading/Uploading

To execute any of the following operations, click its appropriate button.

Downloading Firmware

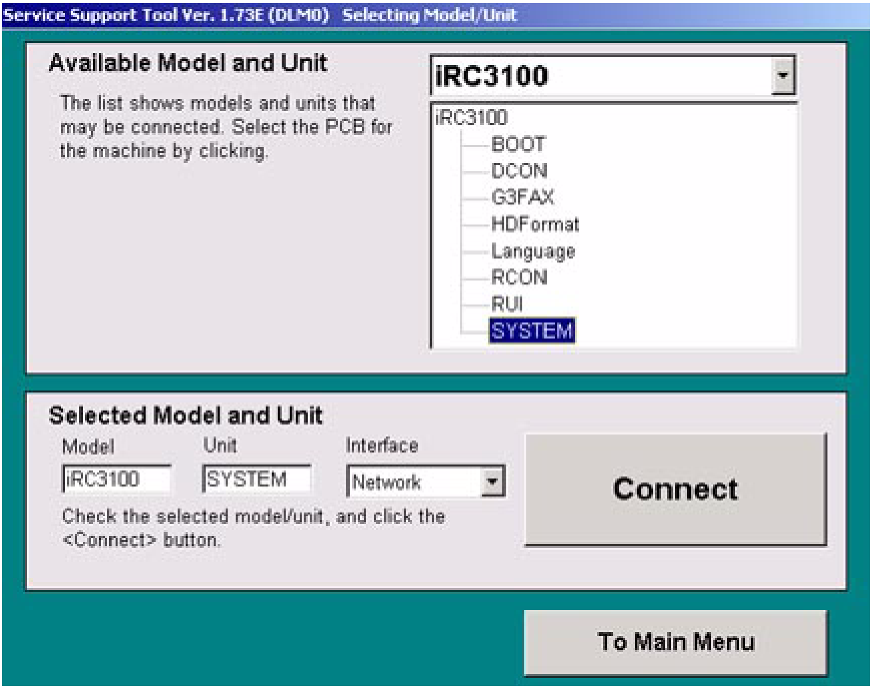
Uploading Backup Data

Downloading Backup Data

To Next
To Next
Ending the Service Support Tool
Ver. Info.

F-16-93

2) Select [SYSTEM] under iRC3100, and click [Connect].


Service Support Tool Ver. 1.73E (DLM0) Selecting Model/Unit

Available Model and Unit

The list shows models and units that may be connected. Select the PCB for the machine by clicking.

Selected Model and Unit

Model: iRC3100

Unit: SYSTEM

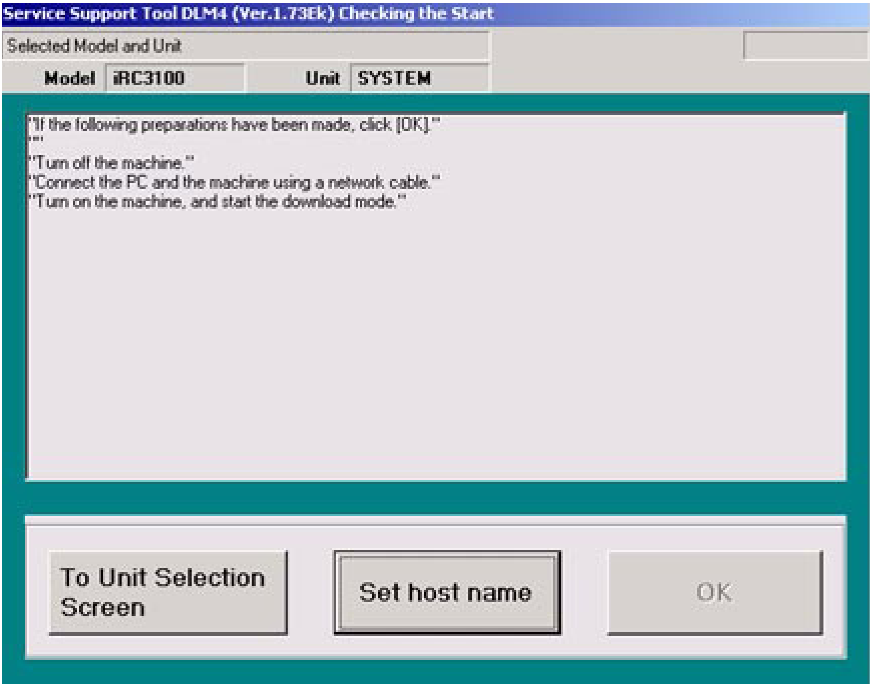
Interface: Network

Check the selected model/unit, and click the <Connect> button.

iRC3100
iRC3100
BOOT
DCON
G3FAX
HDFormat
Language
RCON
RUI
SYSTEM
Connect
To Main Menu

F-16-94

3) Click [Set host name].


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Model
Unit
To Unit Selection Screen
Set host name
OK

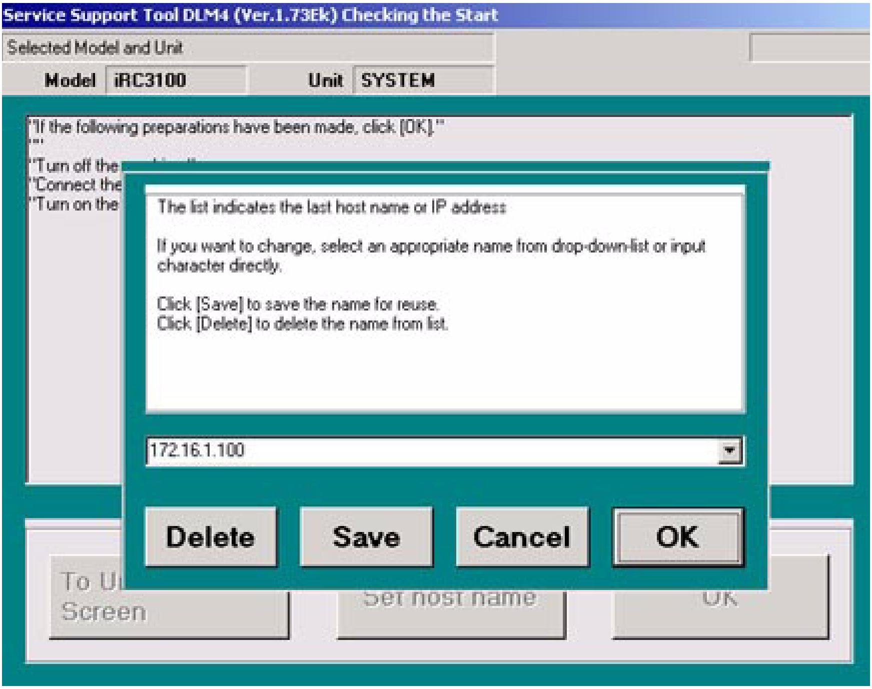
Model: iRC3100

Unit: SYSTEM

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-95

4) The machine's IP address is entered automatically; click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start

Selected Model and Unit

Model iRC3100 Unit SYSTEM

"If the following preparations have been made, click [OK]."
""
"Turn off the
"Connect the
"Turn on the

The list indicates the last host name or IP address

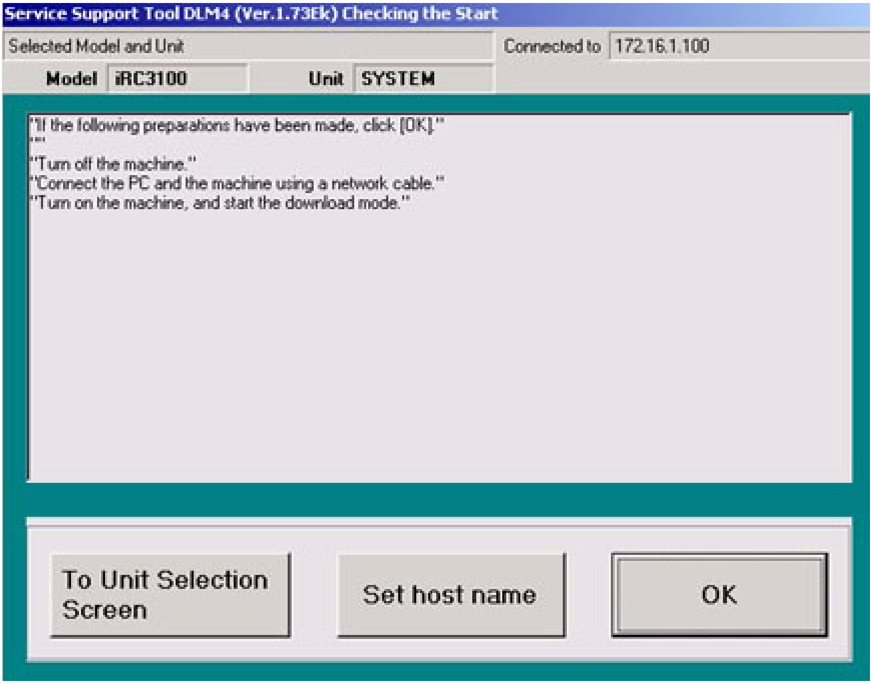
If you want to change, select an appropriate name from drop-down-list or input character directly.

Click [Save] to save the name for reuse.
Click [Delete] to delete the name from list.

172.16.1.100

F-16-96

5) Click [OK] to start connection.



Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start

Selected Model and Unit

Connected to 172.16.1.100

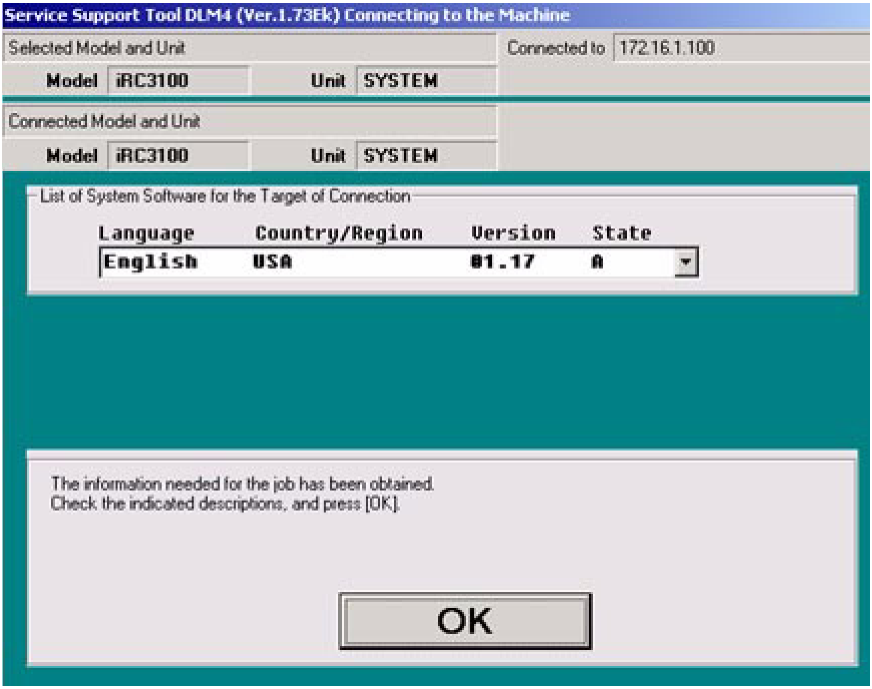
Model iRC3100

Unit SYSTEM

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-97

6) When the machine has made a connection and brings up the following screen, click [OK].


Service Support Tool DLM4 (Ver.1.73Ek) Connecting to the Machine
OK

Selected Model and Unit

Model iRC3100 Unit SYSTEM

Connected to 172.16.1.100

Connected Model and Unit

Model iRC3100 Unit SYSTEM

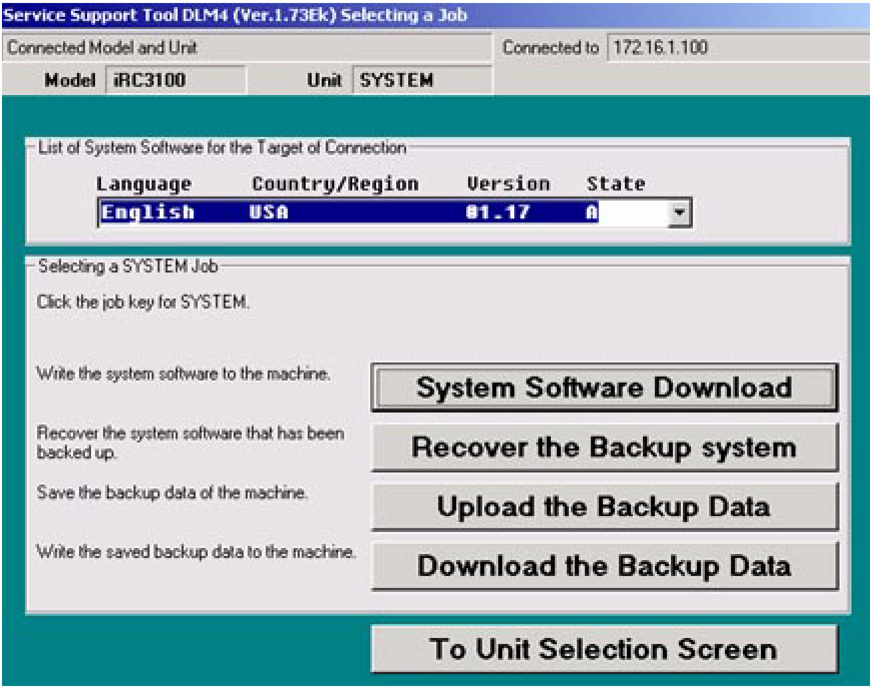
List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

The information needed for the job has been obtained.
Check the indicated descriptions, and press [OK].

F-16-98

7) Click [Upload the Backup Data].

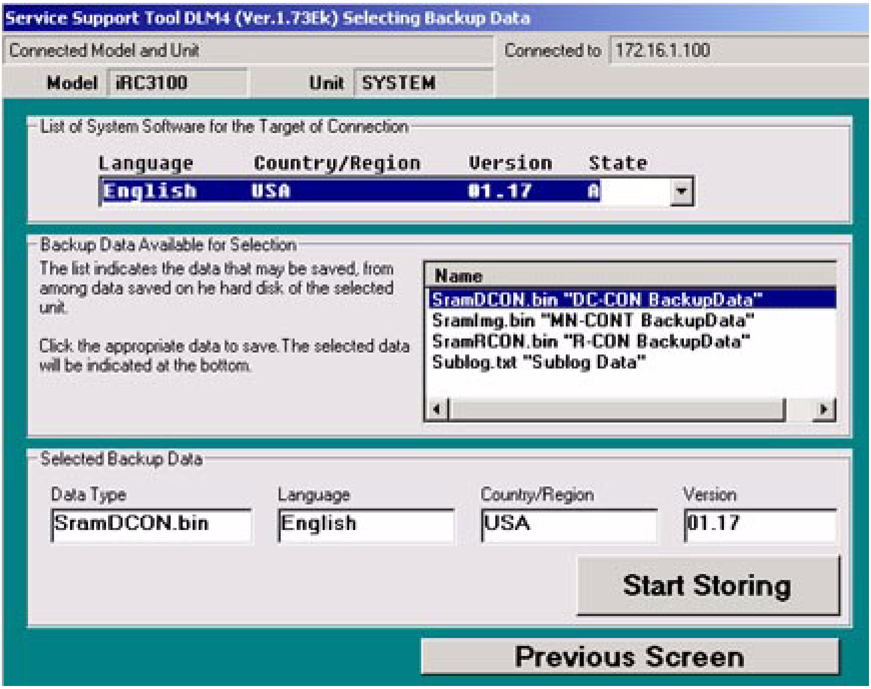

Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Job
Connected Model and Unit
Connected to 172.16.1.100
Model iRC3100
Unit SYSTEM
List of System Software for the Target of Connection
Language Country/Region Version State
English USA 01.17 A
Selecting a SYSTEM Job
Click the job key for SYSTEM.
Write the system software to the machine.
System Software Download
Recover the system software that has been backed up.
Recover the Backup system
Save the backup data of the machine.
Upload the Backup Data
Write the saved backup data to the machine.
Download the Backup Data
To Unit Selection Screen

F-16-99

8) Select the data to upload, and click [Start Storing].

-DC controller PCB: SramDCON.bin

-Reader controller PCB: SramRCON.bin



Service Support Tool DLM4 (Ver.1.73Ek) Selecting Backup Data

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100

Unit SYSTEM

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Backup Data Available for Selection

The list indicates the data that may be saved, from among data saved on he hard disk of the selected unit.

Click the appropriate data to save. The selected data will be indicated at the bottom.

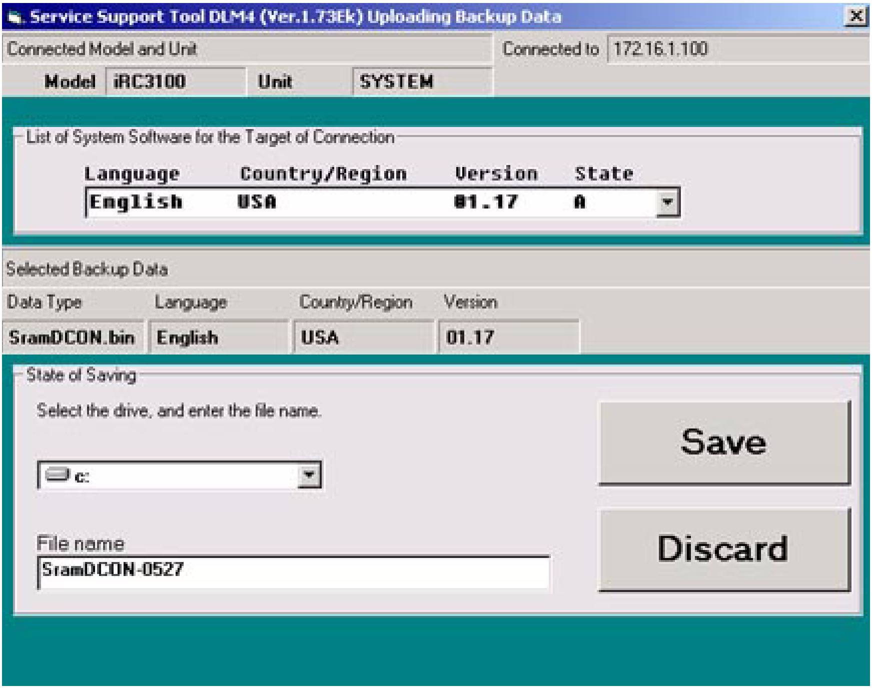
Name
SramDCON.bin "DC-CON BackupData"
SramImg.bin "MN-CONT BackupData"
SramRCON.bin "R-CON BackupData"
Sublog.txt "Sublog Data"

Selected Backup Data

Data Type	Language	Country/Region	Version
SramDCON.bin	English	USA	01.17

F-16-100

9) When uploading has ended, enter a file name to use, and click [Save].



Service Support Tool DLM4 (Ver.1.73Ek) Uploading Backup Data

Connected Model and Unit

Model: iRC3100

Unit: SYSTEM

Connected to: 172.16.1.100

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Selected Backup Data

Data Type	Language	Country/Region	Version
SramDCON.bin	English	USA	01.17

State of Saving

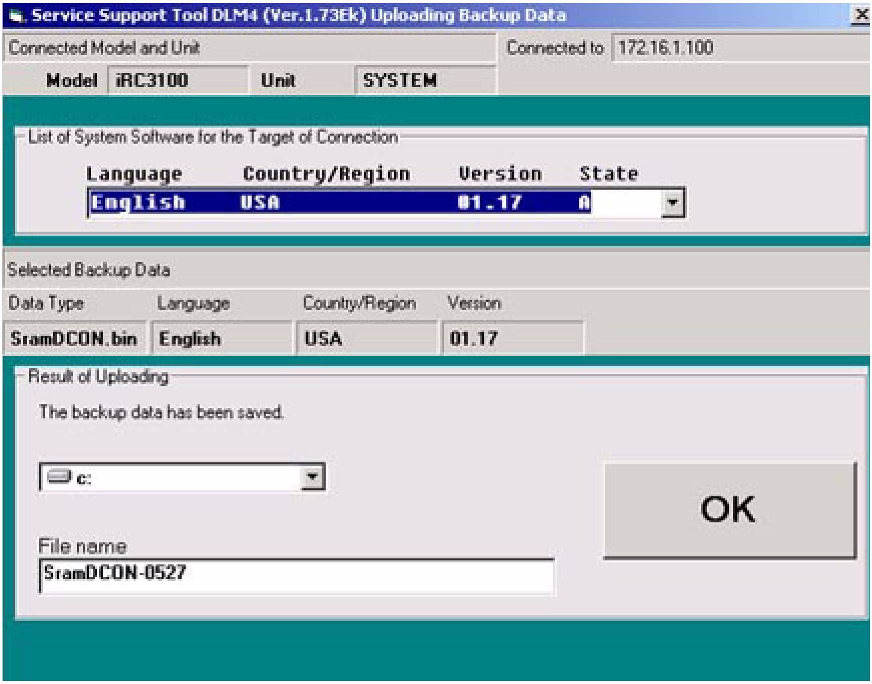
Select the drive, and enter the file name.

c:

File name: SramDCON-0527

F-16-101

10) When the file has been saved, click [OK].


Service Support Tool DLM4 (Ver.1.73Ek) Uploading Backup Data
OK

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100 Unit SYSTEM

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Selected Backup Data

Data Type	Language	Country/Region	Version
SramDCON.bin	English	USA	01.17

Result of Uploading

The backup data has been saved.

c:

File name

SramDCON-0527

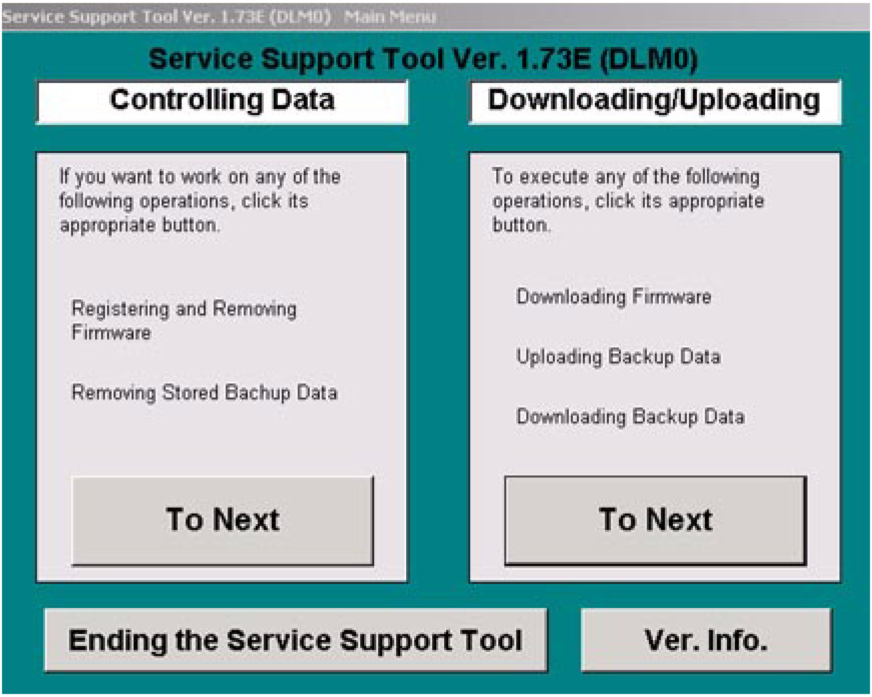
F-16-102

10) Click [To Unit Selection Screen].

16.5.3 Downloading Procedure

[Procedure]
Use normal mode (Power ON 1+7 on keypad) for downloading.

1) Click the [To Next] under Downloading/Uploading.



Service Support Tool Ver. 1.73E (DLM0) Main Menu
Service Support Tool Ver. 1.73E (DLM0)
Controlling Data
Downloading/Uploading

If you want to work on any of the following operations, click its appropriate button.

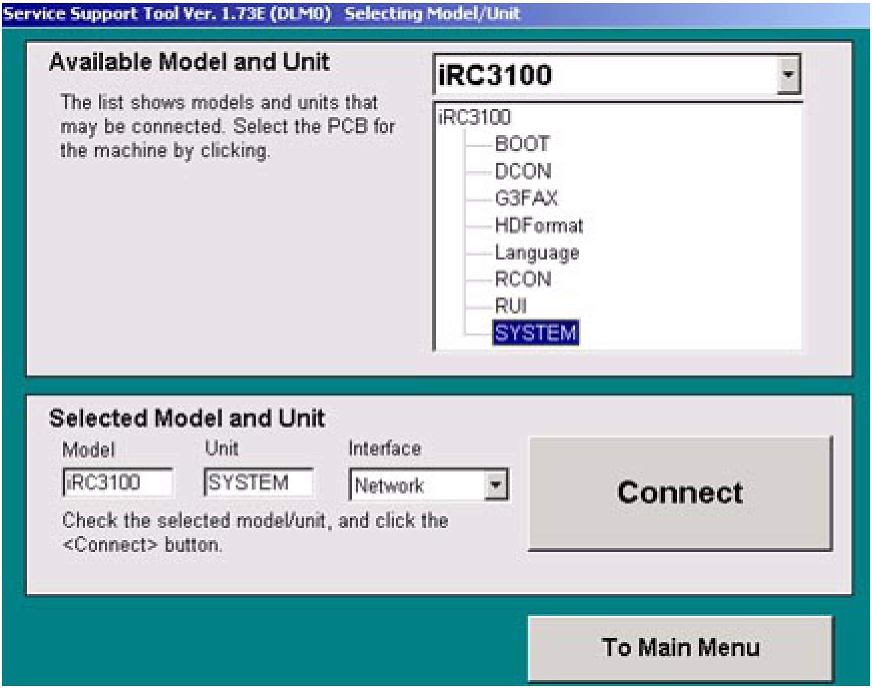
Registering and Removing Firmware
Removing Stored Bachup Data
To Next

To execute any of the following operations, click its appropriate button.

Downloading Firmware
Uploading Backup Data
Downloading Backup Data
To Next
Ending the Service Support Tool
Ver. Info.

F-16-103

2) Select [SYSTEM] under iRC3100, and click [Connect].



Service Support Tool Ver. 1.73E (DLM0) Selecting Model/Unit

Available Model and Unit

The list shows models and units that may be connected. Select the PCB for the machine by clicking.

iRC3100
iRC3100
BOOT
DCON
G3FAX
HDFormat
Language
RCON
RUI
SYSTEM

Selected Model and Unit

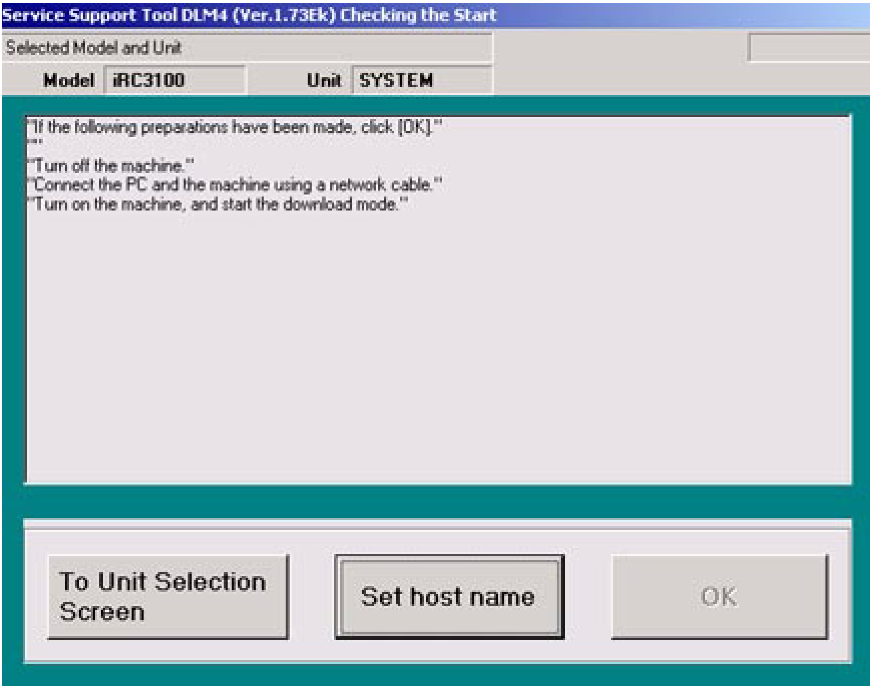
Model: iRC3100
Unit: SYSTEM
Interface: Network

Check the selected model/unit, and click the <Connect> button.

Connect
To Main Menu

F-16-104

3) Click [Set host name].


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Model
Unit
To Unit Selection Screen
Set host name
OK

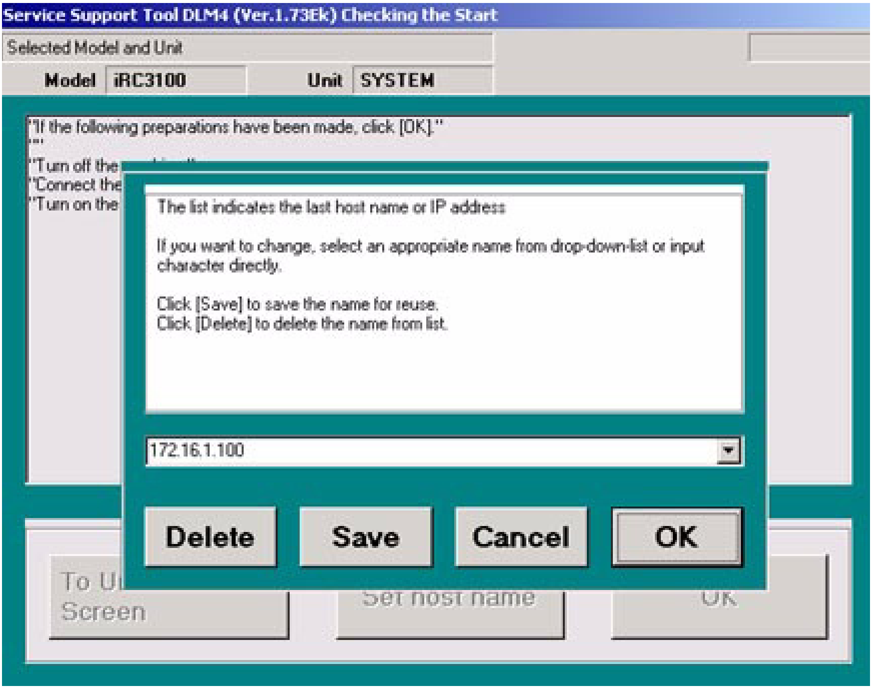
Model iRC3100

Unit SYSTEM

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-105

4) The machine's IP address is entered automatically; click [OK].


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Model
Unit
Delete
Save
Cancel
OK
To U
Screen
Set host name
OK

Model: iRC3100

Unit: SYSTEM

"If the following preparations have been made, click [OK]."

"Turn off the

"Connect the

"Turn on the

The list indicates the last host name or IP address

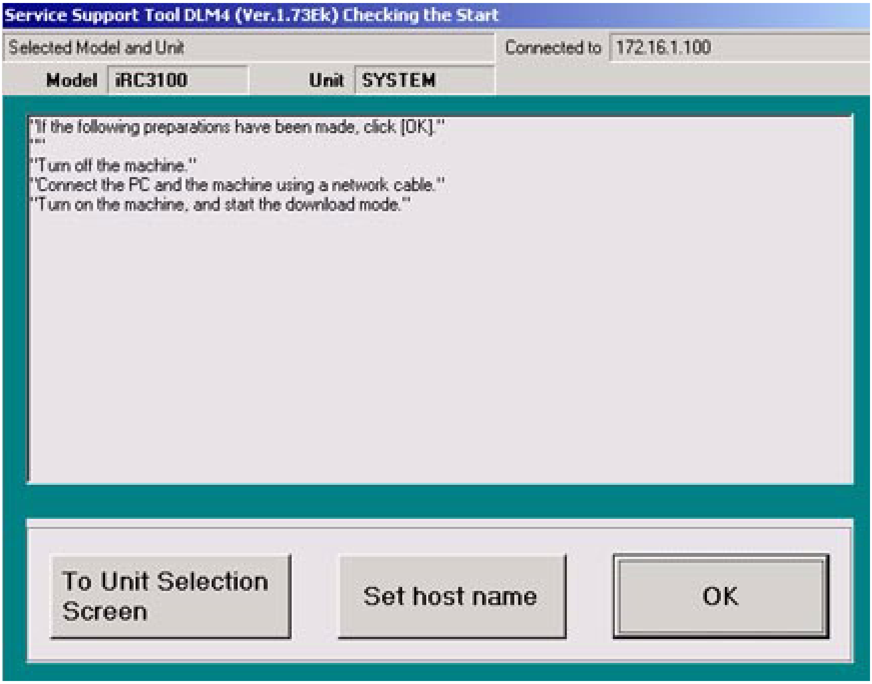
If you want to change, select an appropriate name from drop-down-list or input character directly.

Click [Save] to save the name for reuse.
Click [Delete] to delete the name from list.

172.16.1.100

F-16-106

5) Click [OK] to start connection.


Service Support Tool DLM4 (Ver.1.73Ek) Checking the Start
Selected Model and Unit
Connected to
Model
Unit
To Unit Selection Screen
Set host name
OK

Connected to 172.16.1.100

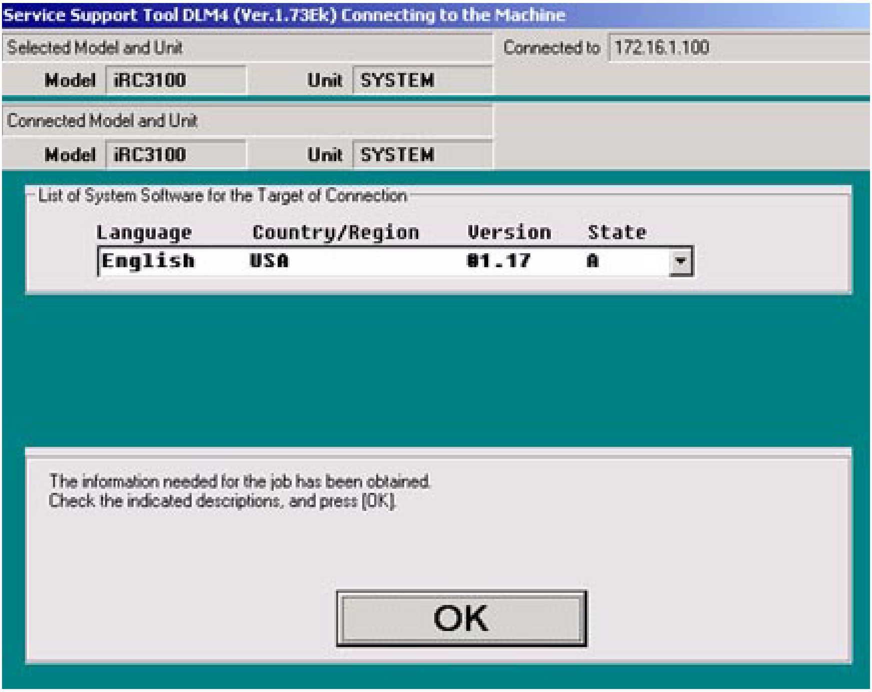
Model iRC3100

Unit SYSTEM

"If the following preparations have been made, click [OK]."
""
"Turn off the machine."
"Connect the PC and the machine using a network cable."
"Turn on the machine, and start the download mode."

F-16-107

6) When the machine has made a connection and brings up the following screen, click [OK].


Service Support Tool DLM4 (Ver.1.73Ek) Connecting to the Machine
OK

Selected Model and Unit

Model iRC3100 Unit SYSTEM

Connected to 172.16.1.100

Connected Model and Unit

Model iRC3100 Unit SYSTEM

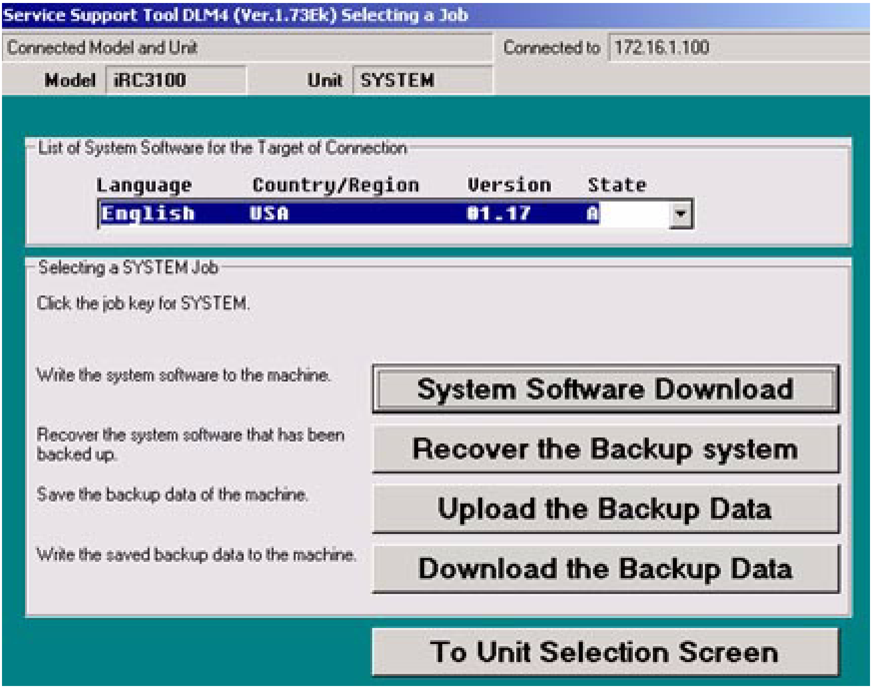
List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

The information needed for the job has been obtained.
Check the indicated descriptions, and press [OK].

F-16-108

7) Click [Download the Backup Data].



Service Support Tool DLM4 (Ver.1.73Ek) Selecting a Job

Connected Model and Unit

Model: iRC3100

Unit: SYSTEM

Connected to: 172.16.1.100

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Selecting a SYSTEM Job

Click the job key for SYSTEM.

Write the system software to the machine.

Recover the system software that has been backed up.

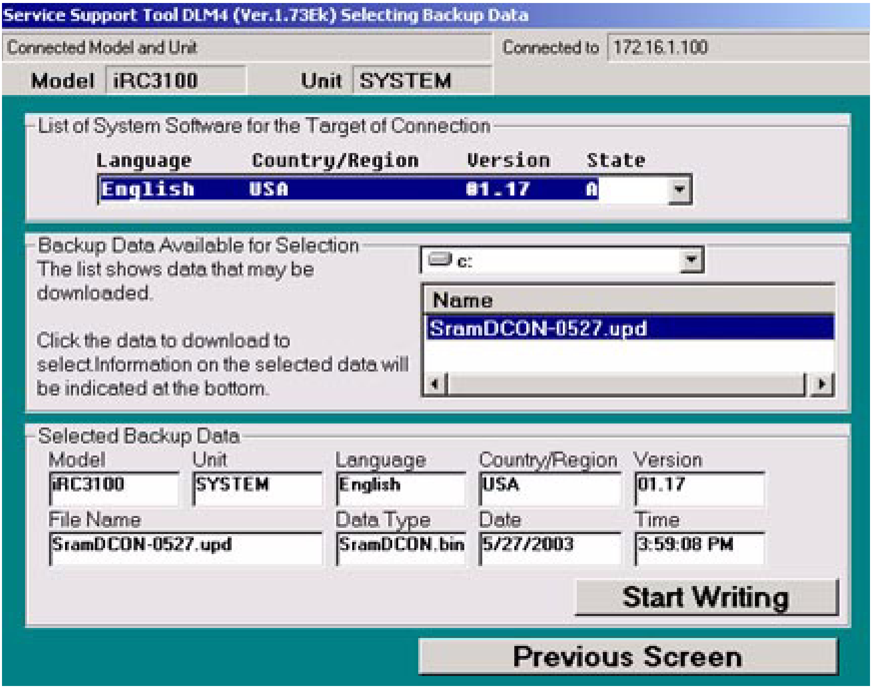
Save the backup data of the machine.

Write the saved backup data to the machine.

System Software Download
Recover the Backup system
Upload the Backup Data
Download the Backup Data
To Unit Selection Screen

F-16-109

8) Select the file to download, and click [Start Writing].



Service Support Tool DLM4 (Ver.1.73Ek) Selecting Backup Data

Connected Model and Unit

Connected to 172.16.1.100

Model iRC3100 Unit SYSTEM

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Backup Data Available for Selection

The list shows data that may be downloaded.

Click the data to download to select.Information on the selected data will be indicated at the bottom.

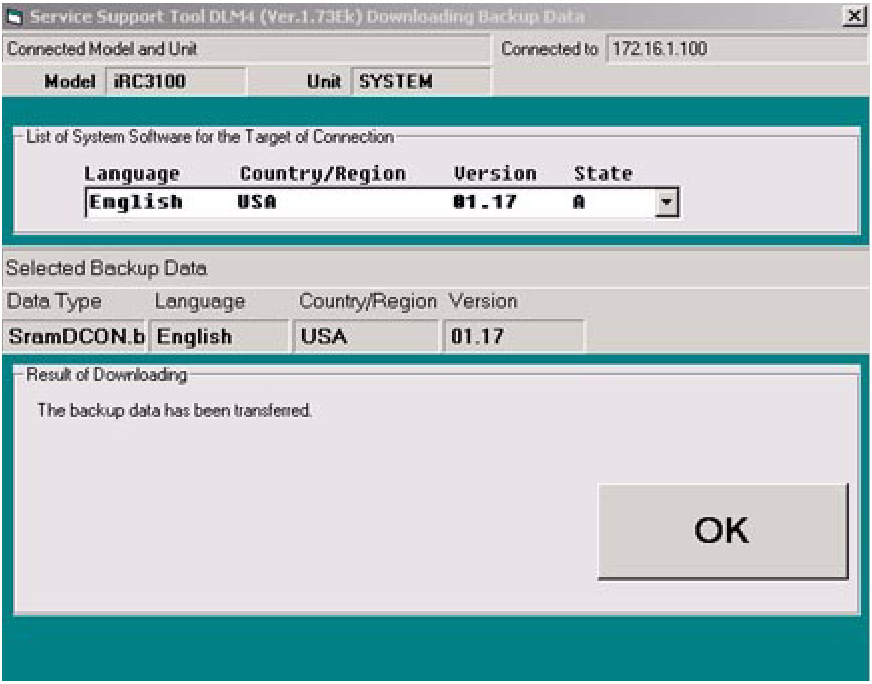
Selected Backup Data

Model	Unit	Language	Country/Region	Version
iRC3100	SYSTEM	English	USA	01.17

File Name	Data Type	Date	Time
SramDCON-0527.upd	SramDCON.bin	5/27/2003	3:59:08 PM

F-16-110

9) When uploading has ended, click [OK].



Service Support Tool DLM4 (Ver.1.73Ek) Downloading Backup Data

Connected Model and Unit

Model: iRC3100

Unit: SYSTEM

Connected to: 172.16.1.100

List of System Software for the Target of Connection

Language	Country/Region	Version	State
English	USA	01.17	A

Selected Backup Data

Data Type	Language	Country/Region	Version
SramDCON.b	English	USA	01.17

Result of Downloading

The backup data has been transferred.

F-16-111

10) Click [To Unit Selection Screen].

Chapter 17 Service Tools

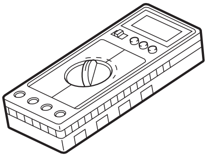
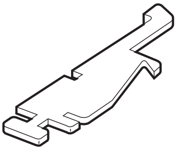
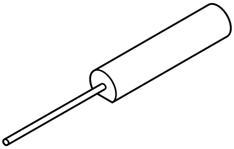
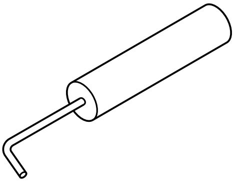
Contents

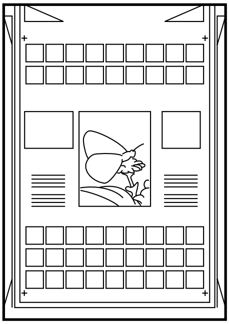
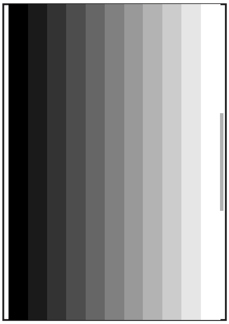
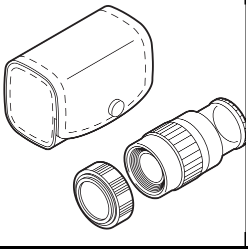
17.1 Special Tools..17-1
17.2 Solvents and Oils...17-3

17.1 Special Tools

In addition to the standard tooles set, the following special tools are required when servicing the machine:

T-17-1

Tool name	Tool No.	Ctgr	Appearance	Remarks
Digital multimeter	FY9-2002	A		Use for electrical checks; for adjustment of laser power in combination with the laser power checker.
Cover switch	TKN-0093	A		
Tester extension pin	FY9-3038	A		Used as a probe extension when making electrical checks.
Tester extension pin (L-shaped)	FY9-3039	A		Used as a probe extension when making electrical checks.

Tool name	Tool No.	Ctgr	Appearance	Remarks
CA1 test Sheet	FY9-9030	A		Used for adjusting/ checking images.
D-10 test sheet	FY9-9129	B		Used for adjusting images.
Loupe	CK-0056	B		Used for checking images.

[Ctgr]

A: Must be kept by each service engineer.

B: Must be kept by each group of about five engineers.

C: Must be kept by each warkshop.

17.2 Solvents and Oils

T-17-2

Item	**Uses**	**Composition**	**Remarks**
Alcohol	Cleaning; e.g., glass, plastic, ruber; external covers.	-Fluoride-family hydrocarbon -Alcohol -Surface activating -Water	-Do not bring ner fire. -Procure locally. -Substitute: IPA(isopropy alcohol)
Solvent	Cleaning; e.g., metal; oil or toner stain.	-Fluoride-family hydrocarbon -Chlorine-family hydrocarbon -Alcohol	-Do not bring ner fire. -Procure locally. -Substitute: MEK
Heat-resisting grease	Lubrication; e.g., fixing drive areas.	-Mineral oil-family lithium soap -Molybdenum disulfide	-MO-138S -Tool No: CK-0427 (500 g/can)
Lubricating oil		-Mineral oil (paraffin-family)	-Tool No: CK-0524 (100 cc)
Lubricating oil	Lubrication; e.g., drive areas, friction areas.	-Silicone oil	-Tool No: CK-0551 (20 g)
Lubricating oil (EM-50L)	Lubrication; e.g., gears.	-Special oil -Special solid lubricating agent -Lithium soap	-Tool No: HY9-0007
Libricating oil	Lubrication; e.g., scanner rail.	-Silicone oil	-Tool No: 9-6011 (50 cc)

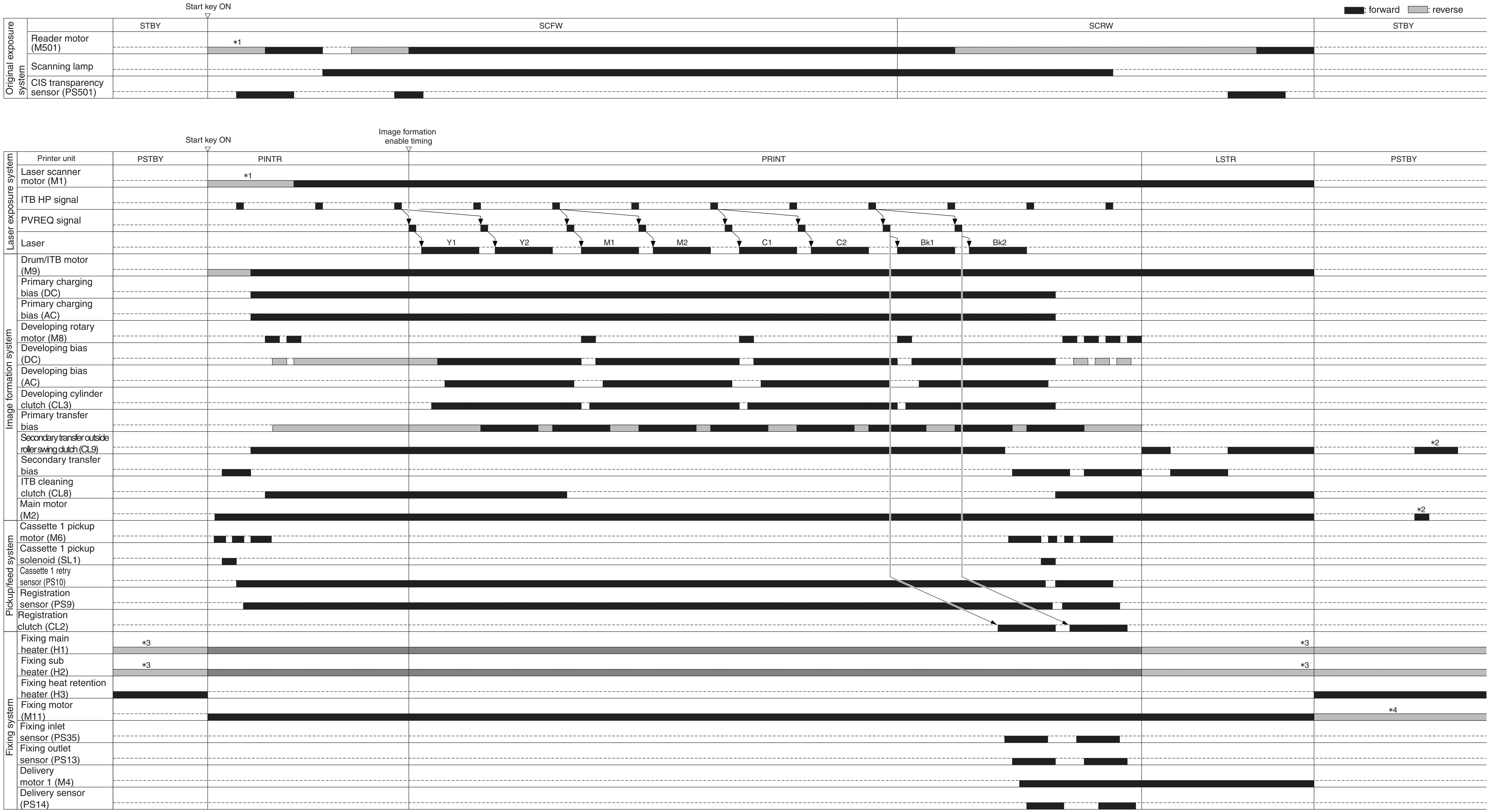
Item	Uses	Composition	Remarks
Conducting grease	Lubrication; e.g., edge of secondary transfer roller	-Fluorine poly wthyl -Polytetra fluorune ethylene	-Tool No: FY9-6008 (75 g)

Appendix

Contents

1 General Timing Chart.. 1
  Full Color 1
  Mono color 2
2 General Circuit Diagram 3
  Signal Names.. 3
  General Circuit Diagram 7

<Conditions>
reading: book mode, 1 A4 original
printing: plain paper, cassette 1, A4 single-sided, 1


Start key ON
■: forward ▨: reverse
STBY
SCFW
SCRW
STBY
Original exposure system
Reader motor (M501)
*1
Scanning lamp
CIS transparency sensor (PS501)
Start key ON
Image formation enable timing
Printer unit
PSTBY
PINTR
PRINT
LSTR
PSTBY
Laser exposure system
Laser scanner motor (M1)
*1
ITB HP signal
PVREQ signal
Laser
Y1
Y2
M1
M2
C1
C2
Bk1
Bk2
Image formation system
Drum/ITB motor (M9)
Primary charging bias (DC)
Primary charging bias (AC)
Developing rotary motor (M8)
Developing bias (DC)
Developing bias (AC)
Developing cylinder clutch (CL3)
Primary transfer bias
Secondary transfer outside roller swing clutch (CL9)
*2
Secondary transfer bias
ITB cleaning clutch (CL8)
Main motor (M2)
*2
Pickup/feed system
Cassette 1 pickup motor (M6)
Cassette 1 pickup solenoid (SL1)
Cassette 1 retry sensor (PS10)
Registration sensor (PS9)
Registration clutch (CL2)
Fixing system
Fixing main heater (H1)
*3
*3
Fixing sub heater (H2)
*3
*3
Fixing heat retention heater (H3)
Fixing motor (M11)
*4
Fixing inlet sensor (PS35)
Fixing outlet sensor (PS13)
Delivery motor 1 (M4)
Delivery sensor (PS14)

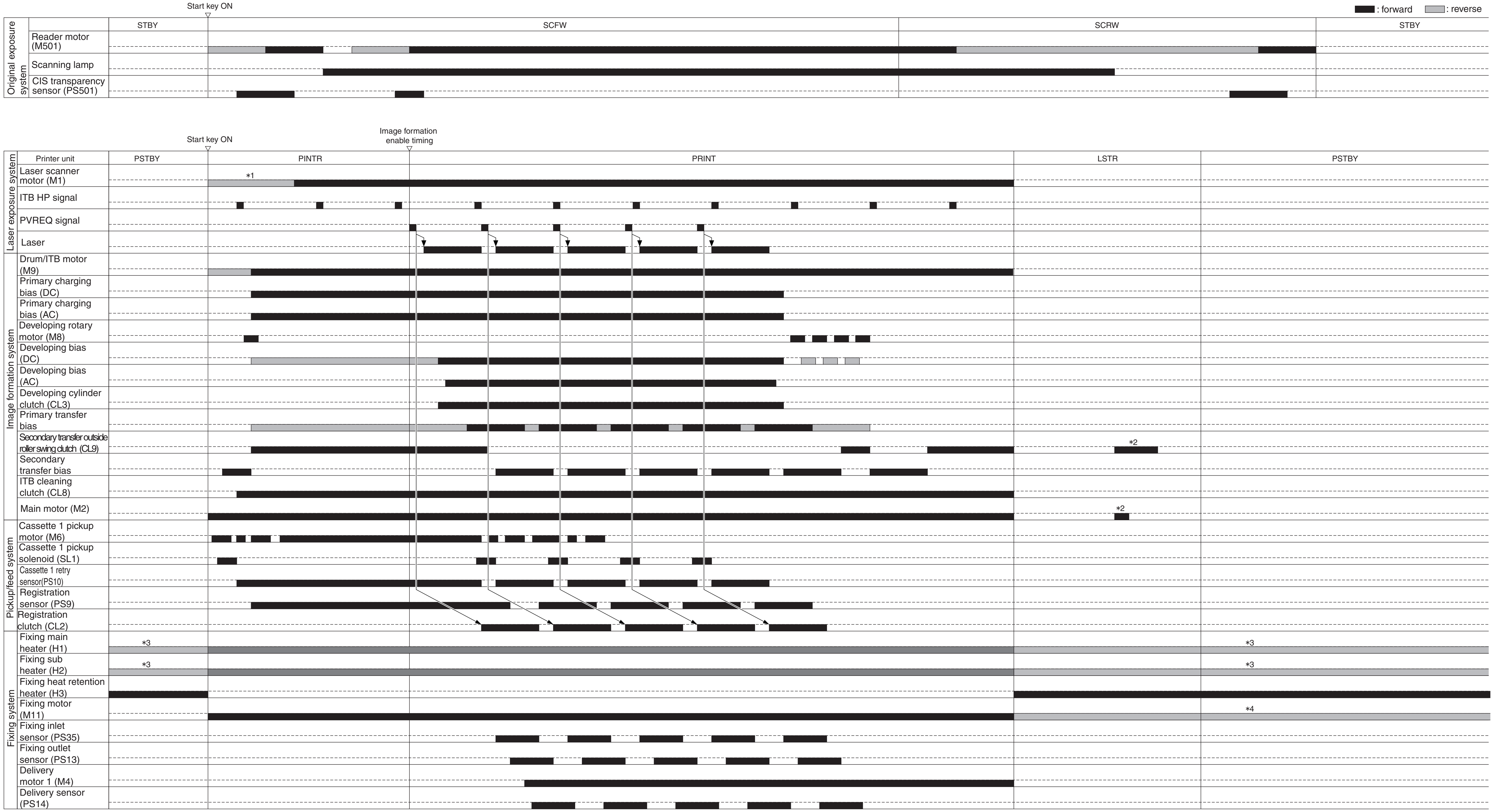
*1: used to stabilization the rotation.
*2: moves the secondary transfer outside roller away from the ITB about 30 sec after the start of standby.
*3: executes temperature control (to 190 deg C) using the main heater or the sub heater to suit the readings of the main thermistor (TH1) and the sub thermistor (TH2).
*4: causes the fixing roller to rotate idly according to the printing time.
(if 1 to 3 min, idle rotation for 30 sec; 3 min or more, idle rotation for 75 sec)

F-1-1

Mono color

iR C3100

<Conditions>
reading: book mode, 1 A4 original
printing: plain paper, cassette 1, A4 single-sided, 5



*1: used to stabilization the rotation.
*2: moves the secondary transfer outside roller away from the ITB about 30 sec after the start of standby.
*3: executes temperature control (to 190 deg C) using the main heater or the sub heater to suit the readings of the main thermistor (TH1) and the sub thermistor (TH2).
*4: causes the fixing roller to rotate idly according to the printing time. (if 1 to 3 min, idle rotation for 30 sec; 3 min or more, idle rotation for 75 sec)

F-1-2

2 General Circuit Diagram

Signal Names

List of Signals

iR C3100

T-2-1

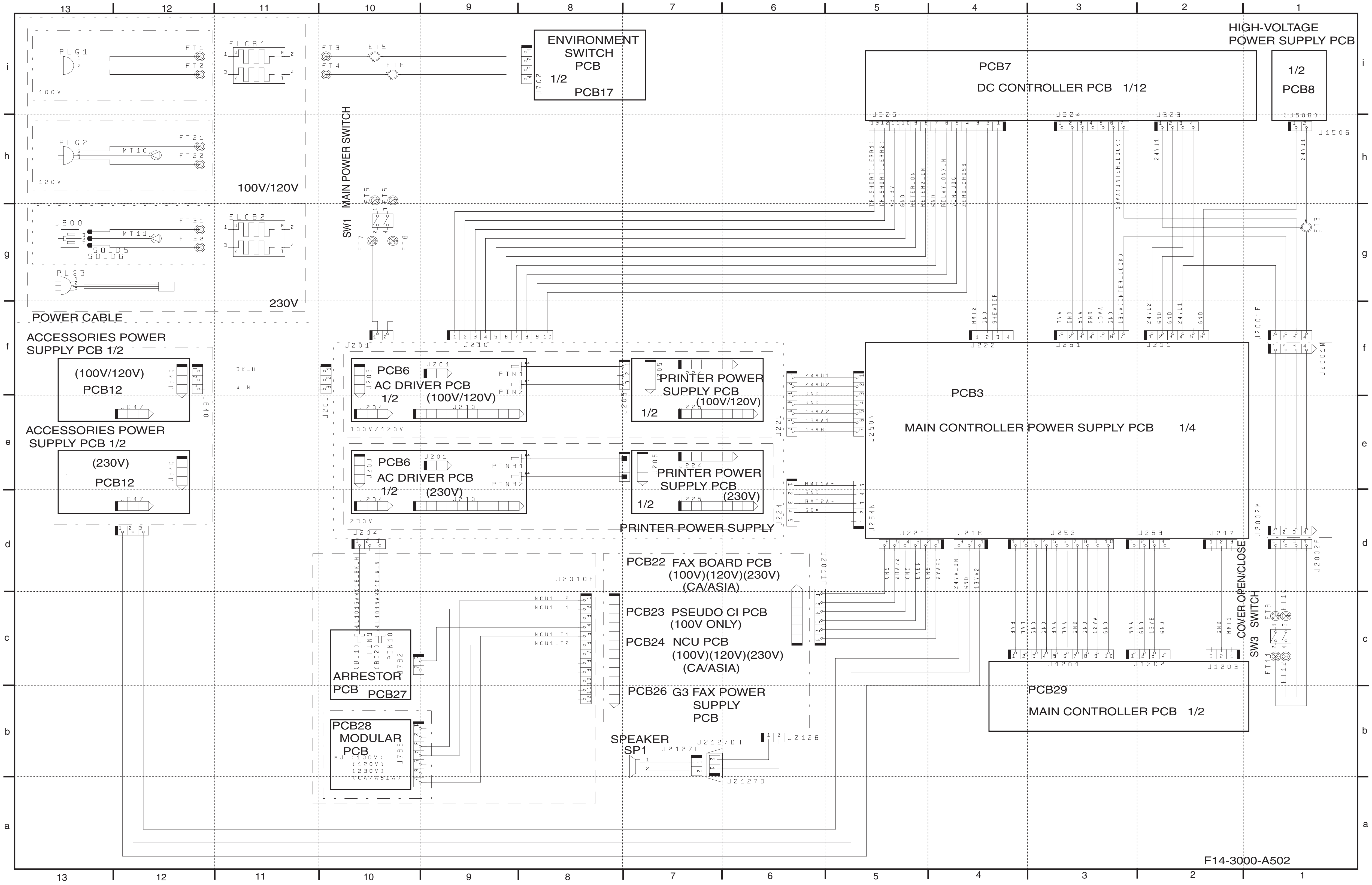
A	stepping motor drive signal phase A
A*	stepping motor drive signal phase A*
AC_H	commercial power supply hot side
AC_N	commercial power supply neutral side
ATR_SL1	ATR shutter solenoid drive signal
ATR4C_LEDON	ATR sensor light emission signal
ATR4C_REF	ATR reference signal
ATR4C_SIG	ATR sensor measurement signal
B	stepping motor drive signal phase B
B*	stepping motor signal phase B*
BD_LOW_N	BD detection signal
BK_H	AC input (hot)
BUF_RXDATA	serial communication (reception) signal
BUF_RXLOAD	serial communication request signal
BUF_TXDATA	serial communication (transmission) signal
BUF_TXEND_N	serial communication (transmission) end signal
BUFCLK	serial communication clock signal
BUFTXOUTENB_N	serial communication (transmission) enable signal
C_SIZE0	cassette paper size detection signal 0
C_SIZE1	cassette paper size detection signal 1
C_SIZE2	cassette paper size detection signal 2
C_SIZE3	cassette paper size detection signal 3
C_SIZE4	cassette paper size detection signal 4
C1_PAPER_SNS	cassette 1 paper detection signal
C1_PICKUP_SL	cassette 1 pickup solenoid drive signal
C1_RETAY_SNS	cassette 1 retry detection signal
C1_SIZECOM	cassette 1 size detection common
C1_VOL_SNS_A	cassette 1 paper level detection signal A
C1VOL_SNS_B	cassette 1 paper level detection signal B
C2_PAPER_SNS	cassette 2 paper detection signal
C2_PICKUP_SL	cassette 2 pickup solenoid drive signal
C2_RETAY_SNS	cassette 2 retry detection signal
C2_SIZECOM	cassette 2 size detection common
C2_VOL_SNS_A	cassette 2 paper level detection signal A
C2VOL_SNS_B	cassette 2 paper level detection signal B
CARRY_DOOR_SNS	feeder cover open/closed detention signal
CCVCNCTN	control card connection detention signal
CCVCNCTN2	card reader connection detection signal
CCVCNT2	control card count signal
CCX_IPC_RX3	serial communication (reception) signal
CCX_IPC_TX3	serial communication (transmission) signal
CHGAC	primary charging AC remote signal
CHGACPWM	primary charging AC PWM signal
CHGDCPWM	primary charging DC PWM signal
CHGIMONITOR	primary charging DC current detection signal
CNT0	laser activation control signal 0
CNT1	laser activation control signal 1
CNT2	laser activation control signal 2
COIN_COUNT	coin vendor count signal
COIN_RXD	serial communication (reception) signal
COIN_TXD	serial communication (transmission) signal
CRG_CHG_SNS	toner cartridge access cover open/closed detection signal
CVR_SENS0	copyboard cover open/closed (front sensor) detection signal
CVR_SENS1	copyboard cover open/closed (read sensor) detection signal
DC1_CLK	main motor acceleration signal
DC1_GAIN	main motor speed switchover signal

DC1_LOCK_N	main motor clock detection signal
DC1_MONX_N	main motor deceleration signal
DC2_CLK	drum motor acceleration signal
DC2_GAIN	drum motor speed switchover signal
DC2_LOCK_N	drum motor clock detection signal
DC2_MONX_N	drum motor deceleration signal
DCCLK_1	high-voltage DC drive clock signal
DCCLK_2	high-voltage DC drive clock signal
DECK_RXDATA	serial communication (reception) signal
DECK_RXLOAD	serial communication request signal
DECK_TXDATA	serial communication (transmission) signal
DECK_TXEND_N	serial communication (transmission) end signal
DECKCLK	serial communication clock signal
DECKTXOUTENB_N	serial communication (transmission) enable signal
DEVAC	not used
DEVAC2	developing AC remote signal
DEVACPWM2	developing AC PWM signal
DEVCLKA	not used
DEVCLKB	developing AC clock signal
DEVCLKC	developing AC clock signal
DEVDCPWM2	developing DC PWM signal
DEVDCPWM2	not used
DEVMOT_HP_SNS	developing rotary home position detection signal
DF_KSMCK	ADF pickup motor clock
DF_RDMCK	ADF read motor clock
DF_RDSENS	ADF read sensor signal
DF_RMASENS	ADF pre-registration sensor signal
DF_RXD	ADF communication serial reception data (ADF to reader)
DF_SCLK	ADF communication serial clock
DF_SLOAD	ADF communication serial clock
DF_TXD	ADF communication serial transmission (reader to ADF)
DUP_CARRY_CL	duplexing/feeding clutch drive signal
DUP_CARRY_SNS	duplexing paper detection signal
ECO_CS	reset signal
ECO_DIN	data input signal
ECO_DOUT	data output signal
ECO_SCK	clock signal
ENV_THM	temperature detection signal (analog)
EX_MOTCLK1	relay delivery assembly motor clock signal 1
EX_MOTCLK2	relay delivery assembly motor clock signal 2
EX_RXD	serial communication (reception) signal
EX_TXD	serial communication (transmission) signal
FAN_DET	fan rotation developing signal
FAN1_HALF	exhaust fan R half-speed drive signal
FAN1_LOCK	exhaust fan R lock detection signal
FAN1_ON	exhaust fan R drive signal
FAN2_HALF	exhaust fan L half-speed drive signal
FAN2_LOCK	exhaust fan L lock detection signal
FAN2_ON	exhaust fan L drive signal
FBTCLK_1	not used
FBTCLK_2	not used
FCHG1	primary charging AC clock signal
FD1_FULL_SNS	delivery 1 full detection signal
FD1_SNS	delivery 1 detection signal
FEED_1_MOTOR A	feed motor 1 drive signal A
FEED_1_MOTOR A*	feed motor 1 drive signal A*
FEED_1_MOTOR B	feed motor 1 drive signal B
FEED_1_MOTOR B*	feed motor 1 drive signal B*
FEED_2_MOTOR A	feed motor 2 drive signal A
FEED_2_MOTOR A*	feed motor 2 drive signal A*
FEED_2_MOTOR B	feed motor 2 drive signal B
FEED_2_MOTOR B*	feed motor drive signal B*

FEED_DOOR_SNS_R	feeder cover open/closed detection signal
FIN_DLMODE	finisher download mood selection signal
FIN_DOWNROAD	finisher download data signal
FIN_RESET	finisher download reset signal
FQ_HUM	humidity detection signal (analog)
FRAMCLK	clock signal
FRAMCS	reset signal
FRAMDT	data signal
FRONT_DOOR_SNS	front cover open/closed detection signal
FUSER_C_NCTHM	fixing main thermistor detection signal C
FUSER_CNCTX_N	fixing assembly detection signal
FUSER_DELI_SNS	fixing delivery paper detection signal
FUSER_IN_SNS	fixing inlet paper detection signal
FUSER_R_NCTHM	fixing main thermistor detection signal R
FUSER_THM	fixing sub thermistor detection signal
FUSERDC_CLK	fixing motor clock output signal
FUSERDC_GAIN	fixing motor speed control signal
FUSERDC_LOCK_N	fixing motor speed detection signal
FUSERDC_MONX_N	fixing motor drive signal
HETER_ON	fixing main heater drive signal
HETER2_ON	fixing sub heater drive signal
HP_SENS	original home position detection signal
HV_SUB_OPN_S	primary transfer bias normal/reverse switchover remote signal
HVRMT	not used
ITB_CLN_CL	ITB cleaning clutch drive signal
ITBFAN_LOCK	ITB duct fan lock signal
ITBFAN_ON	ITB duct fan drive signal
ITBHP_SNS	ITB home position detection signal
ITBLED_ON	ITB home position sensor LED drive signal
KEY_N	control key connection detection signal
LAMP_ON	scanning lamp activation signal
LASER_PD_OUT	laser intensity signal
LASER_PWCHG	laser power selection signal
MF_PAPER_WIDTH	manual feed paper width detection signal (analog)
MUL_CL	manual feed pickup clutch drive signal
MUL_PAPER_SENS	manual feed paper detection signal
NCU1_L1	telephone line connection
NCU1_L2	telephone line connection
NCU1_T1	extension telephone connection
NCU1_T2	extension telephone connection
OHP_ANLG_FRONT	transparency sensor analog input signal
OHP_LEDON_N	transparency sensor LED drive signal
PATCH_P	patch P wave detection signal
PATCH_S	patch S wave detection signal
PATCHL_ANALG_CONT	patch detection number of samplings
PATCHLED_ON	patch detection LED drive signal
PEDE_MOTCLK1	cassette paper pedestal motor clock signal 1
PEDE_MOTCLK2	cassette pedal motor clock signal 2
PEDE_RXD	serial communication (reception) signal
PEDE_TXD	serial communication (transmission) signal
PO_FGX_N	scanner motor speed signal
PO_OACCX_N	scanner motor acceleration signal
PO_ODECX_N	scanner motor deceleration signal
PWM_KA(N)	laser A PWM signal
PWM_KA(P)	laser A PWM signal
PWM_KB(N)	laser B PWM signal
PWM_KB(P)	laser B PWM signal
REG_CL	registration clutch drive signal
REG_SNS	pre-registration paper detection signal
RELAY_ONX_N	heater drive enable signal
RMT1	remote signal 1
RMT1A*	remote signal 1
RMT2	remote signal 2
RMT2A*	remote signal 2

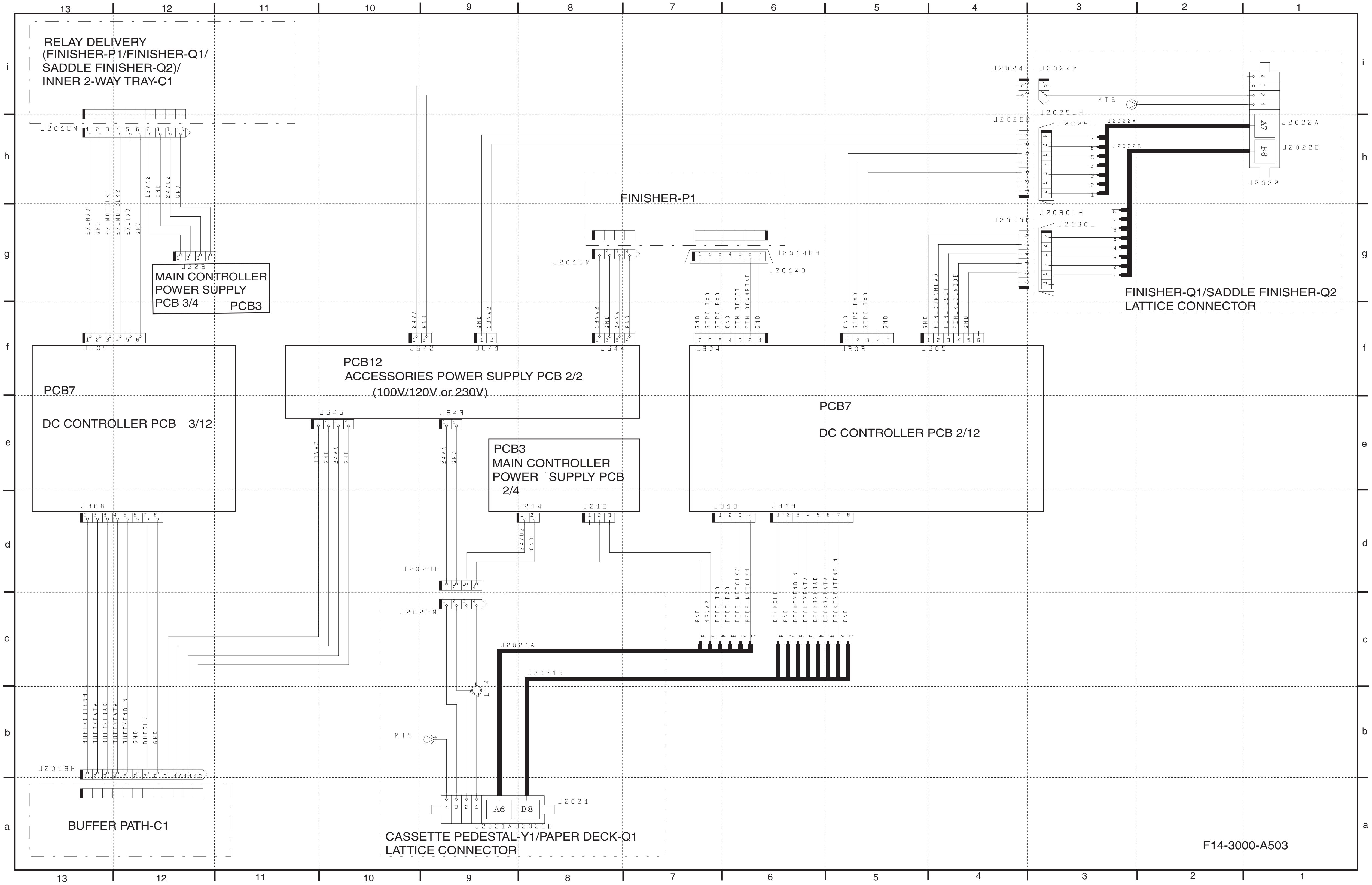
RVTR2DC	secondary transfer reverse bias remote signal
SD*	shutdown signal
SHEATER	fixing heat retaining heater drive signal
SIPC_RXD	serial communication (reception) signal
SIPC_TXD	serial communication (transmission) signal
SIZE2	original size detection signal
SLEEVE_CL	developing cylinder clutch drive signal
TONER_CL	toner feedscrew clutch drive signal
TONERFAN_HALF	toner suction fan drive signal (half seed)
TONERFAN_LOCK	toner suction fan lock detection signal
TONERFAN_ON	toner suction fan drive signal (full speed)
TR_SHORT(_ERR1)	triac short-circuit detection signal 1
TR_SHORT(_ERR2)	triac short-circuit detection signal 2
TR1IMONITOR	primary transfer current detection signal
TR1PWM	primary transfer constant current PWM signal
TR2_CS	secondary transfer output detection signal
TR2_YODO_CL	secondary transfer outside roller swing clutch drive signal
TR2CCPWM	not used
TR2CVPWM	secondary transfer constant current PWM signal
TR2IMONITOR	secondary transfer current detection signal
UL1D15AWG1B_BK_H	AC line (hot)
UL1D15AWG1B_W_N	AC line (neutral)
VIN_JOG	input voltage identification signal
W_N	AC input (neutral)
W_TONERFULL	waste toner case full detection signal
ZERO_CROSS	zero cross detection signal

General Circuit Diagram A503


13
12
11
10
9
8
7
6
5
4
3
2
1
i
h
g
f
e
d
c
b
a
HIGH-VOLTAGE POWER SUPPLY PCB
PCB8
1/2
PCB7
DC CONTROLLER PCB 1/12
ENVIRONMENT SWITCH PCB
1/2
PCB17
J702
PLG1
FT1
FT2
ELCB1
100V
PLG2
MT10
FT21
FT22
120V
100V/120V
J800
MT11
FT31
FT32
SOLD5
SOLD6
ELCB2
PLG3
230V
POWER CABLE
FT3
FT4
ET5
ET6
FT5
FT6
FT7
FT8
MAIN POWER SWITCH
SW1
J325
J324
J323
J1506
ET3
24VU1
24VU2
GND
13VA(INTER_LOCK)
RMT2
SHEATER
3VA
5VA
13VA
J201
J210
J222
J251
J211
J2001F
J2001M
ACCESSORIES POWER SUPPLY PCB 1/2
(100V/120V)
PCB12
J640
J647
BK_H
W_N
J203
PCB6
AC DRIVER PCB
1/2
(100V/120V)
J204
PIN1
PIN2
J205
J224
PRINTER POWER SUPPLY PCB
(100V/120V)
1/2
J225
J250N
PCB3
MAIN CONTROLLER POWER SUPPLY PCB 1/4
100V/120V
ACCESSORIES POWER SUPPLY PCB 1/2
(230V)
PCB12
PCB6
AC DRIVER PCB
1/2
(230V)
PIN31
PIN32
PRINTER POWER SUPPLY PCB
(230V)
1/2
230V
RMT1A*
RMT2A*
SD*
J254N
PRINTER POWER SUPPLY
J221
J218
J252
J253
J217
J2002M
J2002F
COVER OPEN/CLOSE SWITCH
SW3
FT9
FT10
FT11
FT12
PCB22 FAX BOARD PCB
(100V)(120V)(230V)
(CA/ASIA)
PCB23 PSEUDO CI PCB
(100V ONLY)
PCB24 NCU PCB
(100V)(120V)(230V)
(CA/ASIA)
PCB26 G3 FAX POWER SUPPLY PCB
J2010F
J2011F
NCU1_L2
NCU1_L1
NCU1_T1
NCU1_T2
ARRESTOR PCB
PCB27
J782
PCB28
MODULAR PCB
MJ (100V) (120V) (230V) (CA/ASIA)
J796
SPEAKER
SP1
J2127L
J2127DH
J2127D
J2126
J1201
J1202
J1203
PCB29
MAIN CONTROLLER PCB 1/2
F14-3000-A502

F-2-1

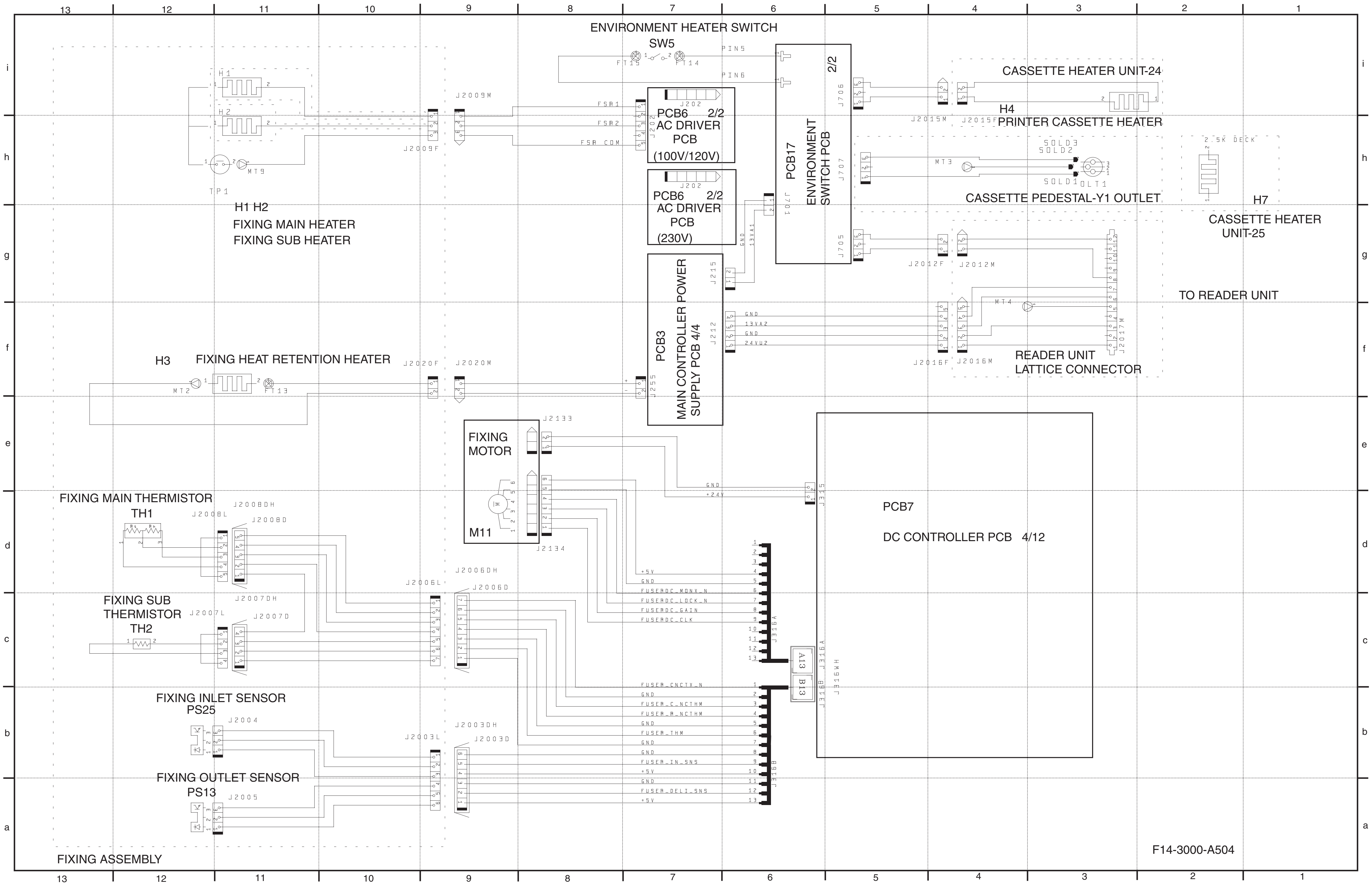
General Circuit Diagram A504(3/11)



13
12
11
10
9
8
7
6
5
4
3
2
1
i
h
g
f
e
d
c
b
a
RELAY DELIVERY
(FINISHER-P1/FINISHER-Q1/
SADDLE FINISHER-Q2)/
INNER 2-WAY TRAY-C1
J2018M
FX_RXD
GND
FX_MOTCLK1
FX_MOTCLK2
FX_TXD
GND
13VA2
GND
24VU2
GND
J223
MAIN CONTROLLER
POWER SUPPLY
PCB 3/4
PCB3
J309
PCB7
DC CONTROLLER PCB 3/12
J306
BUFTXOUTENB_N
BUFRXDATA
BUFRXLOAD
BUFTXDATA
BUFTXEND_N
GND
BUFCLK
GND
J2019M
BUFFER PATH-C1
24VA
GND
13VA2
J642
J641
J644
PCB12
ACCESSORIES POWER SUPPLY PCB 2/2
(100V/120V or 230V)
J645
J643
24VA
GND
PCB3
MAIN CONTROLLER
POWER SUPPLY PCB
2/4
J214
J213
24VU2
GND
J2023F
J2023M
E14
MT5
J2021A
J2021B
J2021
A6
B8
CASSETTE PEDESTAL-Y1/PAPER DECK-Q1
LATTICE CONNECTOR
FINISHER-P1
J2013M
J2014DH
J2014D
SIPC_TXD
SIPC_RXD
FIN_RESET
FIN_DOWNLOAD
J304
J303
J305
FIN_X_DLMODE
PCB7
DC CONTROLLER PCB 2/12
J319
J318
PEDE_TXD
PEDE_RXD
PEDE_MOTCLK2
PEDE_MOTCLK1
DECKCLK
DECKTXEND_N
DECKTXDATA
DECKRXLOAD
DECKRXDATA
DECKTXOUTENB_N
J2024F
J2024M
MT6
J2025D
J2025LH
J2025L
J2022A
J2022B
A7
B8
J2022
J2030D
J2030LH
J2030L
FINISHER-Q1/SADDLE FINISHER-Q2
LATTICE CONNECTOR
F14-3000-A503

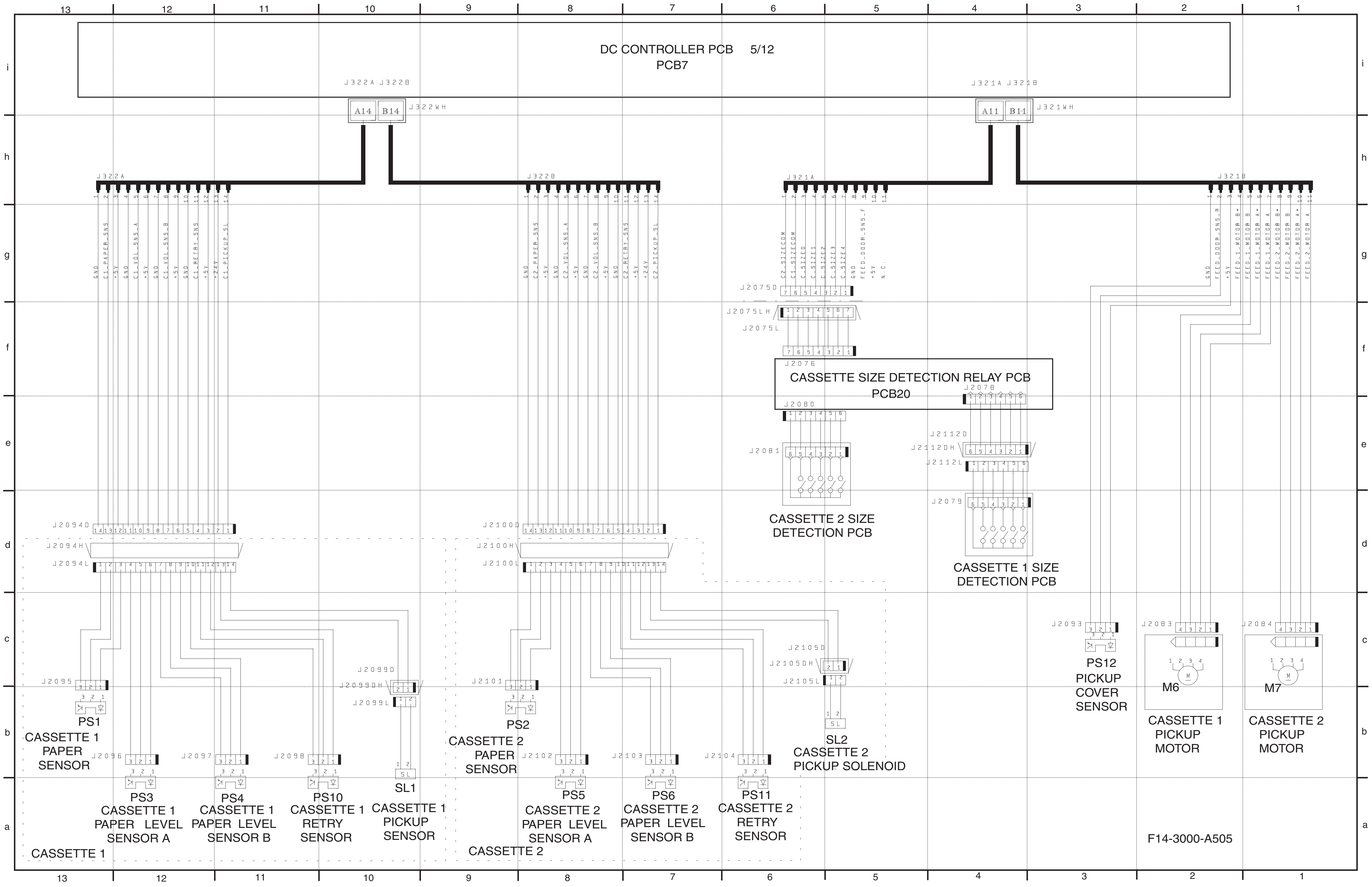
F-2-2

General Circuit Diagram A505(4/11)


ENVIRONMENT HEATER SWITCH
SW5
FT15
FT14
PIN5
PIN6
H1
H2
MT9
TP1
H1 H2
FIXING MAIN HEATER
FIXING SUB HEATER
J2009M
J2009F
FSR1
FSR2
FSR COM
J202
PCB6 2/2
AC DRIVER
PCB
(100V/120V)
PCB6 2/2
AC DRIVER
PCB
(230V)
PCB17
ENVIRONMENT
SWITCH PCB
2/2
J706
J707
J705
J701
J215
J212
J255
PCB3
MAIN CONTROLLER POWER
SUPPLY PCB 4/4
GND
13VA1
GND
13VA2
GND
24VU2
CASSETTE HEATER UNIT-24
H4
PRINTER CASSETTE HEATER
J2015M
J2015F
MT3
SOLD3
SOLD2
SOLD1
OLT1
CASSETTE PEDESTAL-Y1 OUTLET
2.5K DECK
H7
CASSETTE HEATER
UNIT-25
J2012F
J2012M
MT4
TO READER UNIT
J2016F
J2016M
J2017M
READER UNIT
LATTICE CONNECTOR
H3
FIXING HEAT RETENTION HEATER
MT2
FT13
J2020F
J2020M
FIXING
MOTOR
M11
J2133
J2134
GND
+24V
J315
PCB7
DC CONTROLLER PCB 4/12
FIXING MAIN THERMISTOR
TH1
J2008L
J2008DH
J2008D
FIXING SUB
THERMISTOR
TH2
J2007L
J2007DH
J2007D
J2006L
J2006DH
J2006D
+5V
GND
FUSERDC_MONX_N
FUSERDC_LOCK_N
FUSERDC_GAIN
FUSERDC_CLK
J316A
A13
B13
J316B
J316WH
FUSER_CNCTX_N
GND
FUSER_C_NCTHM
FUSER_M_NCTHM
GND
FUSER_THM
GND
GND
FUSER_IN_SNS
+5V
GND
FUSER_DELI_SNS
+5V
FIXING INLET SENSOR
PS25
J2004
J2003L
J2003DH
J2003D
FIXING OUTLET SENSOR
PS13
J2005
FIXING ASSEMBLY
F14-3000-A504

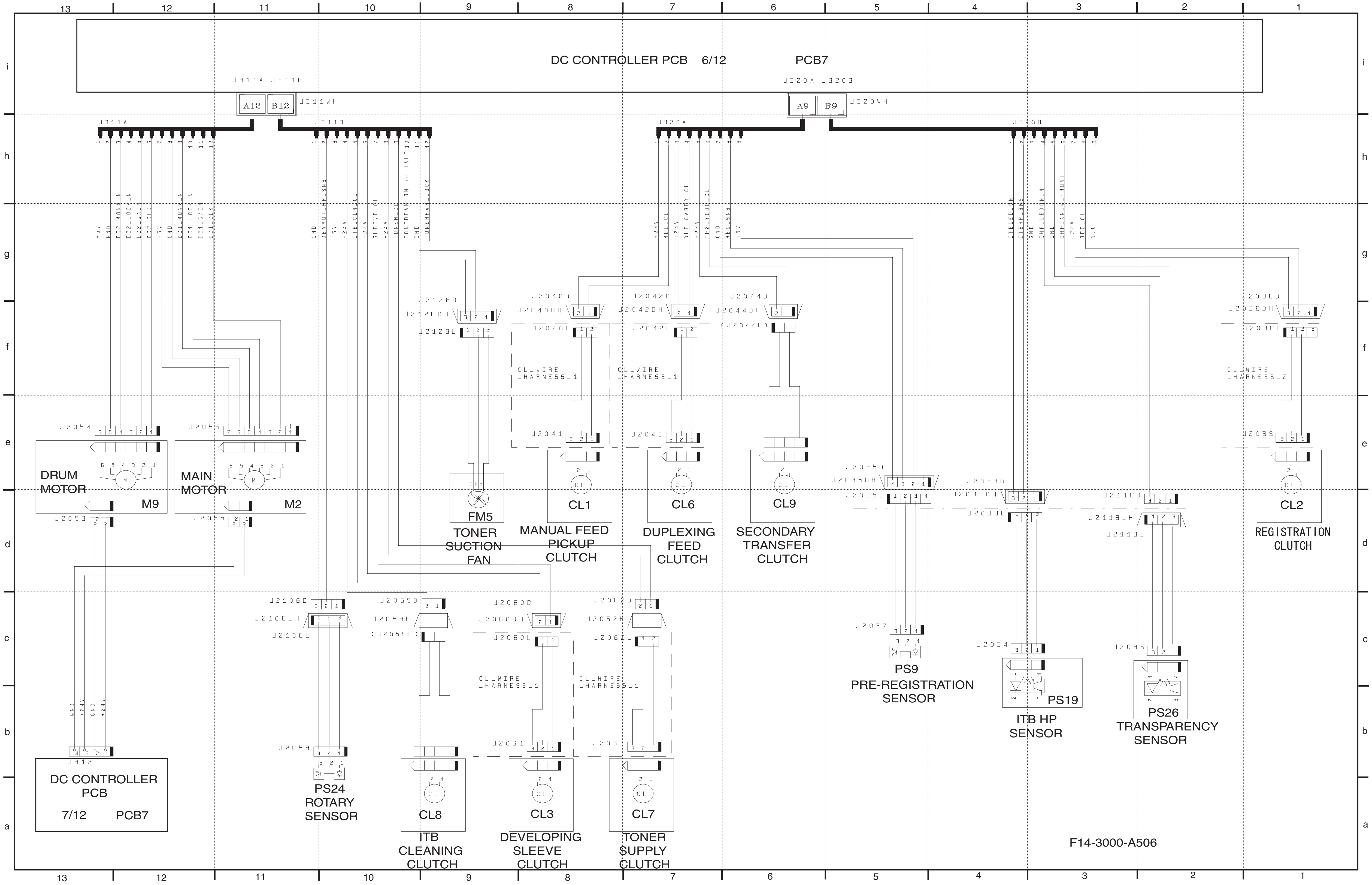
F-2-3

General Circuit Diagram A506(5/11)


13
12
11
10
9
8
7
6
5
4
3
2
1
i
h
g
f
e
d
c
b
a
DC CONTROLLER PCB 5/12
PCB7
J322A J322B
A14
B14
J322WH
J321A J321B
A11
B11
J321WH
J322A
GND
C1_PAPER_SNS
+5V
GND
C1_VOL_SNS_A
+5V
GND
C1_VOL_SNS_B
+5V
GND
C1_RETRY_SNS
+5V
+24V
C1_PICKUP_SL
J322B
GND
C2_PAPER_SNS
+5V
GND
C2_VOL_SNS_A
+5V
GND
C2_VOL_SNS_B
+5V
GND
C2_RETRY_SNS
+5V
+24V
C2_PICKUP_SL
J321A
C2_SIZECOM
C1_SIZECOM
C_SIZE0
C_SIZE1
C_SIZE2
C_SIZE3
C_SIZE4
GND
FEED_DOOR_SNS_F
+5V
N.C.
J321B
GND
FEED_DOOR_SNS_R
+5V
FEED_1_MOTOR_B*
FEED_1_MOTOR_B
FEED_1_MOTOR_A*
FEED_1_MOTOR_A
FEED_2_MOTOR_B*
FEED_2_MOTOR_B
FEED_2_MOTOR_A*
FEED_2_MOTOR_A
J2075D
J2075LH
J2075L
J2076
CASSETTE SIZE DETECTION RELAY PCB
PCB20
J2078
J2080
J2081
CASSETTE 2 SIZE DETECTION PCB
J2112D
J2112DH
J2112L
J2079
CASSETTE 1 SIZE DETECTION PCB
J2094D
J2094H
J2094L
J2100D
J2100H
J2100L
J2095
PS1
CASSETTE 1 PAPER SENSOR
J2096
PS3
CASSETTE 1 PAPER LEVEL SENSOR A
J2097
PS4
CASSETTE 1 PAPER LEVEL SENSOR B
J2098
PS10
CASSETTE 1 RETRY SENSOR
J2099D
J2099DH
J2099L
SL
SL1
CASSETTE 1 PICKUP SENSOR
CASSETTE 1
J2101
PS2
CASSETTE 2 PAPER SENSOR
J2102
PS5
CASSETTE 2 PAPER LEVEL SENSOR A
J2103
PS6
CASSETTE 2 PAPER LEVEL SENSOR B
J2104
PS11
CASSETTE 2 RETRY SENSOR
CASSETTE 2
J2105D
J2105DH
J2105L
SL
SL2
CASSETTE 2 PICKUP SOLENOID
J2093
PS12
PICKUP COVER SENSOR
J2083
M
M6
CASSETTE 1 PICKUP MOTOR
J2084
M
M7
CASSETTE 2 PICKUP MOTOR
F14-3000-A505

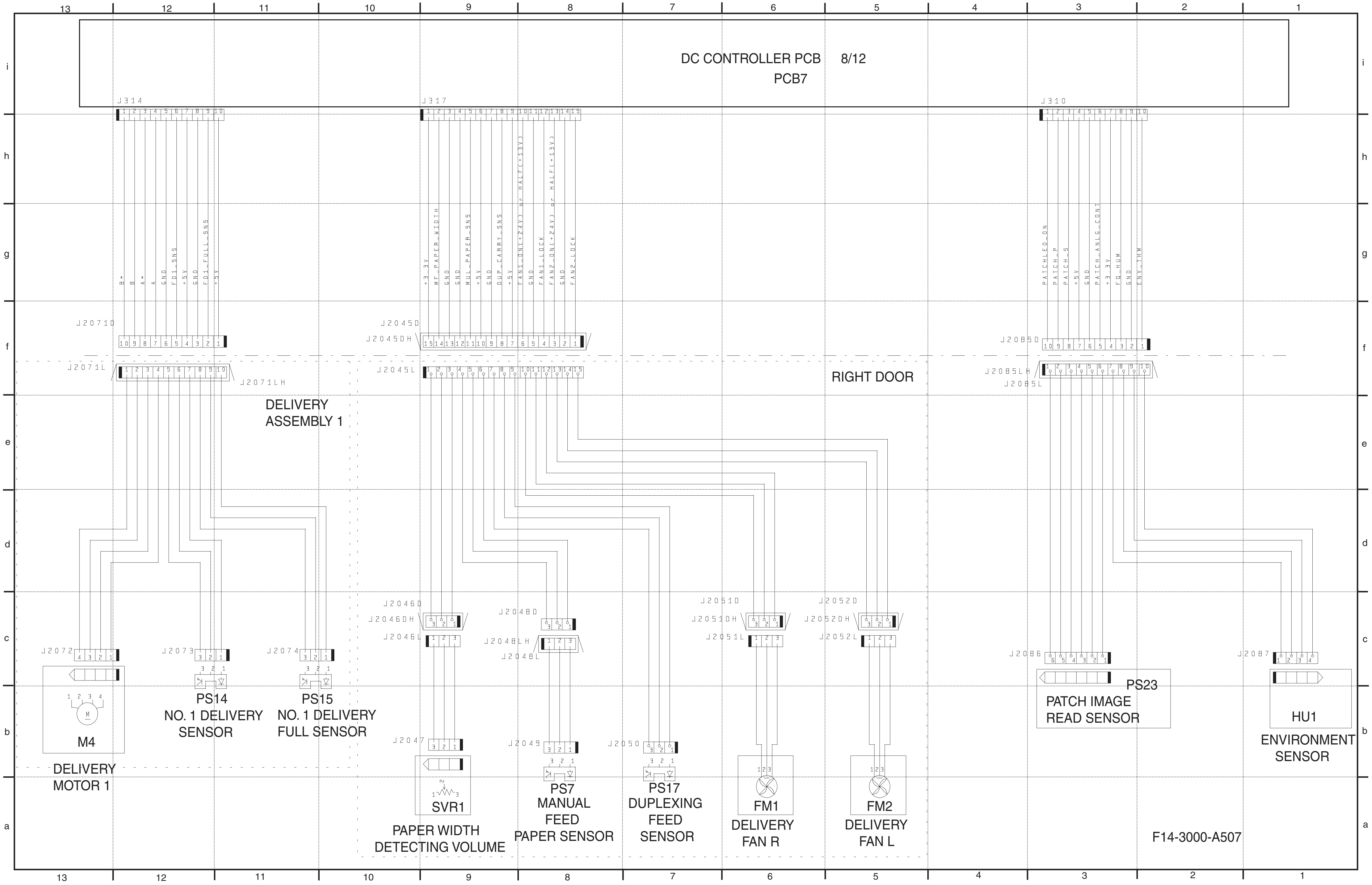
F-2-4

General Circuit Diagram A507(6/11)


DC CONTROLLER PCB 6/12 PCB7
J311A J311B
A12 B12 J311WH
J311A
+5V
GND
DC2_MONX_N
DC2_LOCK_N
DC2_GAIN
DC2_CLK
+5V
GND
DC1_MONX_N
DC1_LOCK_N
DC1_GAIN
DC1_CLK
J311B
GND
DEVMOT_HP_SNS
+5V
+24V
ITB_CLN_CL
+24V
SLEEVE_CL
+24V
TONER_CL
TONERFAN_ON or HALF
GND
TONERFAN_LOCK
J320A J320B
A9 B9 J320WH
J320A
+24V
MUL_CL
+24V
DUP_CARRY_CL
+24V
TR2_YODO_CL
GND
REG_SNS
+5V
J320B
ITBLED_ON
ITBHP_SNS
GND
OHP_LEDON_N
GND
OHP_ANLG_FRONT
+24V
REG_CL
N.C.
J2054
DRUM MOTOR
M9
J2053
J2056
MAIN MOTOR
M2
J2055
J2128D
J2128DH
J2128L
FM5
TONER SUCTION FAN
J2040D
J2040DH
J2040L
CL_WIRE_HARNESS_1
J2041
CL1
MANUAL FEED PICKUP CLUTCH
J2042D
J2042DH
J2042L
CL_WIRE_HARNESS_1
J2043
CL6
DUPLEXING FEED CLUTCH
J2044D
J2044DH
(J2044L)
CL9
SECONDARY TRANSFER CLUTCH
J2038D
J2038DH
J2038L
CL_WIRE_HARNESS_2
J2039
CL2
REGISTRATION CLUTCH
J2035D
J2035DH
J2035L
J2037
PS9
PRE-REGISTRATION SENSOR
J2033D
J2033DH
J2033L
J2034
PS19
ITB HP SENSOR
J2118D
J2118LH
J2118L
J2036
PS26
TRANSPARENCY SENSOR
GND
+24V
GND
+24V
J312
DC CONTROLLER PCB 7/12 PCB7
J2106D
J2106LH
J2106L
J2058
PS24
ROTARY SENSOR
J2059D
J2059H
(J2059L)
CL8
ITB CLEANING CLUTCH
J2060D
J2060DH
J2060L
CL_WIRE_HARNESS_1
J2061
CL3
DEVELOPING SLEEVE CLUTCH
J2062D
J2062H
J2062L
CL_WIRE_HARNESS_1
J2063
CL7
TONER SUPPLY CLUTCH
F14-3000-A506

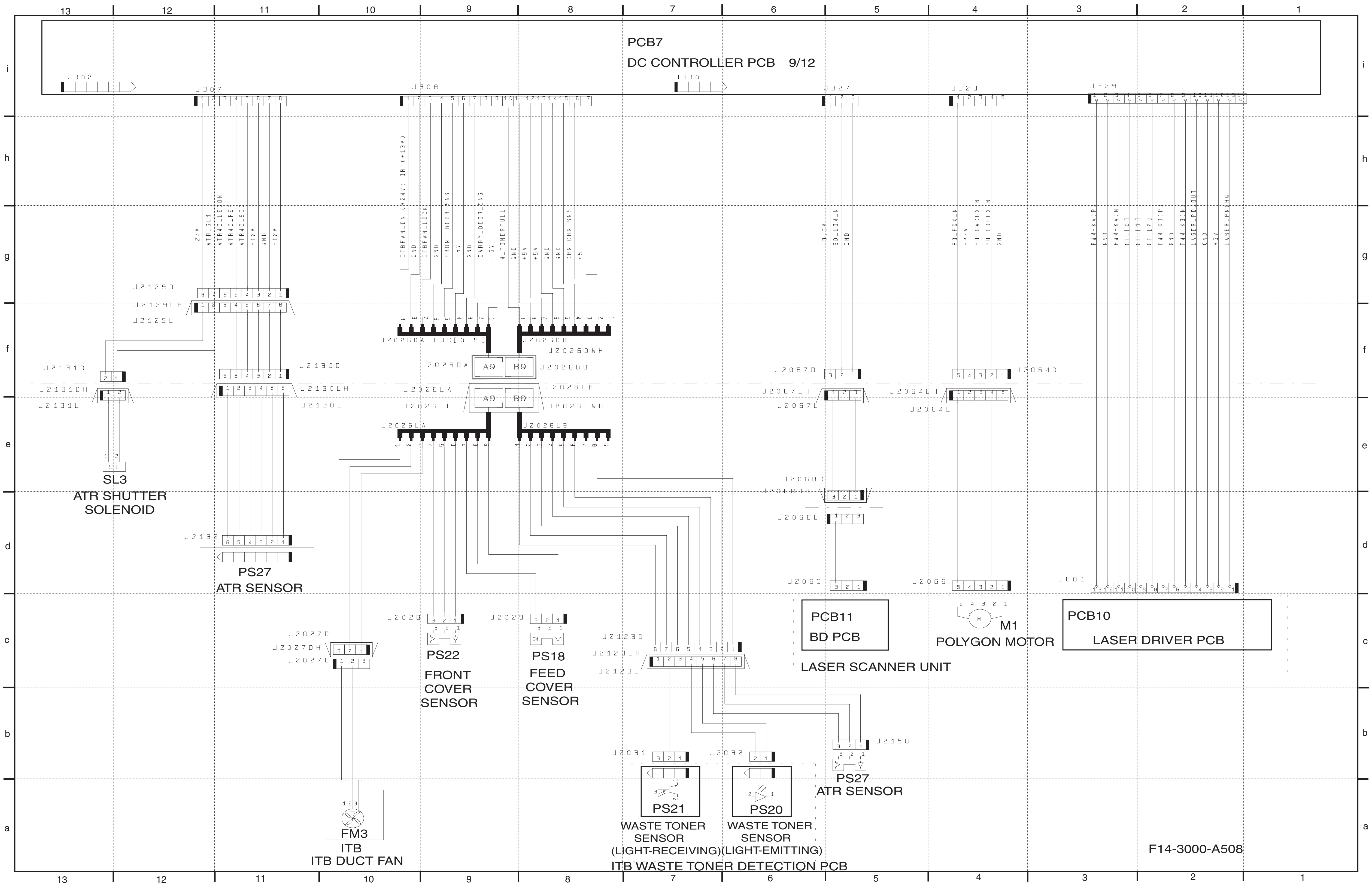
F-2-5

General Circuit Diagram A508(7/11)


DC CONTROLLER PCB 8/12
PCB7
J314
J317
J310
B*
B
A*
A
GND
FD1_SNS
+5V
GND
FD1_FULL_SNS
+5V
+3.3V
MF_PAPER_WIDTH
GND
GND
MUL_PAPER_SNS
+5V
GND
DUP_CARRY_SNS
+5V
FAN1_ON(+24V) or HALF(+13V)
GND
FAN1_LOCK
FAN2_ON(+24V) or HALF(+13V)
GND
FAN2_LOCK
PATCHLED_ON
PATCH_P
PATCH_S
+5V
GND
PATCH_ANLG_CONT
+3.3V
FQ_HUM
GND
ENV_THM
J2071D
J2071L
J2071LH
J2045D
J2045DH
J2045L
J2085D
J2085LH
J2085L
DELIVERY ASSEMBLY 1
RIGHT DOOR
J2072
J2073
J2074
J2046D
J2046DH
J2046L
J2048D
J2048LH
J2048L
J2051D
J2051DH
J2051L
J2052D
J2052DH
J2052L
J2086
J2087
J2047
J2049
J2050
M4
DELIVERY MOTOR 1
PS14
NO. 1 DELIVERY SENSOR
PS15
NO. 1 DELIVERY FULL SENSOR
SVR1
PAPER WIDTH DETECTING VOLUME
PS7
MANUAL FEED PAPER SENSOR
PS17
DUPLEXING FEED SENSOR
FM1
DELIVERY FAN R
FM2
DELIVERY FAN L
PS23
PATCH IMAGE READ SENSOR
HU1
ENVIRONMENT SENSOR
F14-3000-A507

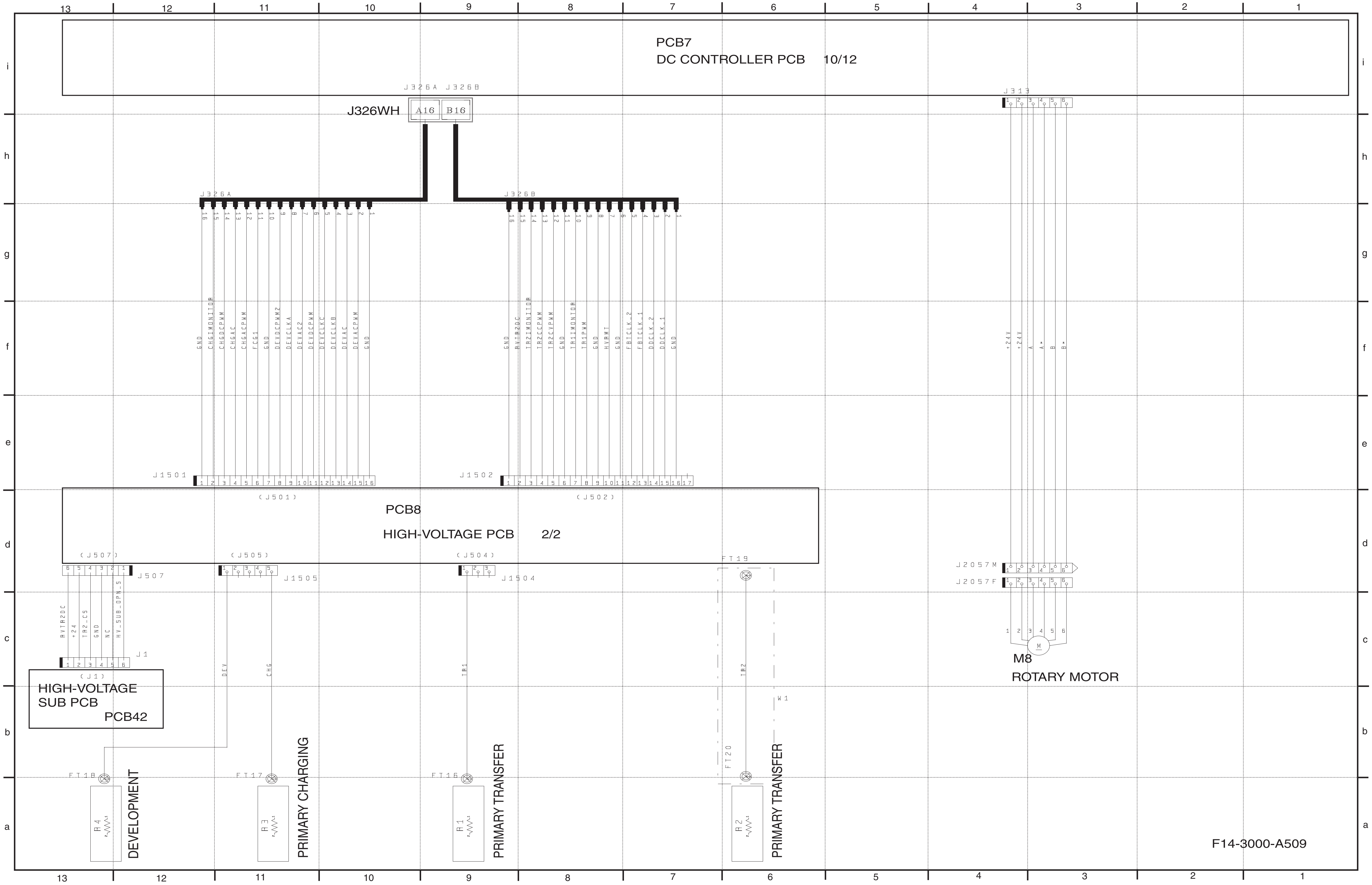
F-2-6

General Circuit Diagram A509(8/11)


PCB7
DC CONTROLLER PCB 9/12
J302
J307
J308
J330
J327
J328
J329
+24V
ATR_SL1
ATR4C_LEDON
ATR4C_REF
ATR4C_SIG
-12V
GND
+12V
ITBFAN_ON (+24V) OR (+13V)
ITBFAN_LOCK
FRONT DOOR_SNS
+5V
CARRY_DOOR_SNS
W_TONERFULL
CRG_CHG_SNS
+5
+3.3V
BD_LOW_N
PD_FGX_N
PD_DACCX_N
PD_DDECX_N
PWM-KA(P)
PWM-KA(N)
CTL[0]
CTL[1]
CTL[2]
PWM-KB(P)
PWM-KB(N)
LASER_PD_OUT
LASER_PWCHG
J2129D
J2129LH
J2129L
J2026DA_BUS[0:9]
J2026DB
J2026DWH
J2026DA
A9
B9
J2026LA
J2026LB
J2026LH
J2026LWH
J2131D
J2131DH
J2131L
J2130D
J2130LH
J2130L
J2067D
J2067LH
J2067L
J2064D
J2064LH
J2064L
J2068D
J2068DH
J2068L
J2069
J2066
J601
SL
SL3
ATR SHUTTER SOLENOID
J2132
PS27
ATR SENSOR
J2028
J2029
PS22
FRONT COVER SENSOR
PS18
FEED COVER SENSOR
J2027D
J2027DH
J2027L
J2123D
J2123LH
J2123L
PCB11
BD PCB
M
M1
POLYGON MOTOR
PCB10
LASER DRIVER PCB
LASER SCANNER UNIT
J2150
PS27
ATR SENSOR
J2031
J2032
PS21
WASTE TONER SENSOR (LIGHT-RECEIVING)
PS20
WASTE TONER SENSOR (LIGHT-EMITTING)
ITB WASTE TONER DETECTION PCB
FM3
ITB
ITB DUCT FAN
F14-3000-A508
13
12
11
10
9
8
7
6
5
4
3
2
1
i
h
g
f
e
d
c
b
a

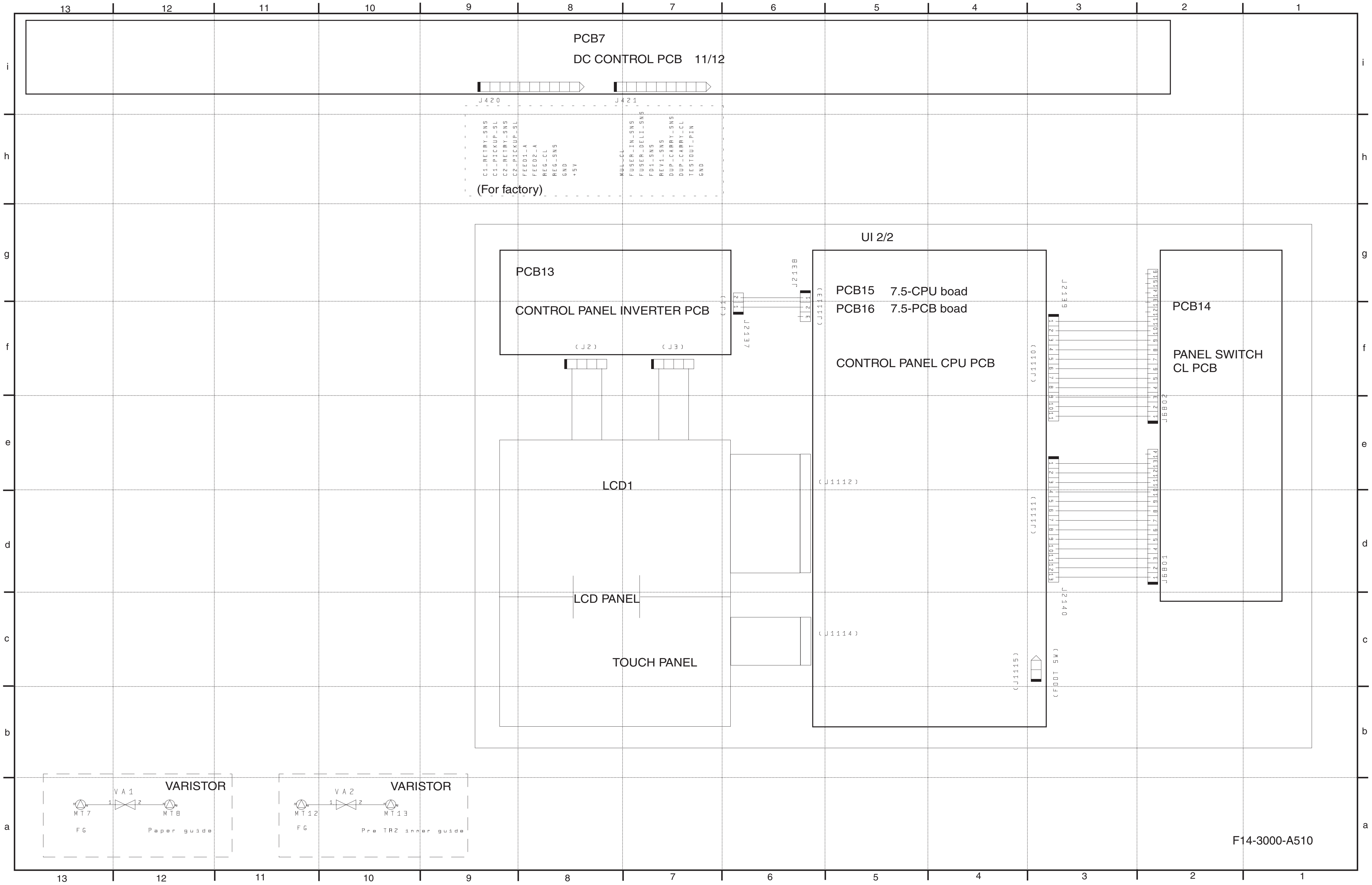
F-2-7

General Circuit Diagram A510(9/11)


PCB7
DC CONTROLLER PCB 10/12
J326A J326B
J326WH
A16
B16
J313
GND
CHGIMONITOR
CHGDCPWM
CHGAC
CHGACPWM
FCG1
GND
DEVDCPWM2
DEVCLKA
DEVAC2
DEVDCPWM
DEVCLKC
DEVCLKB
DEVAC
DEVACPWM
GND
GND
RVTR2DC
TR2IMONITOR
TR2CCPWM
TR2CVPWM
GND
TR1IMONTOR
TR1PWM
GND
HVRMT
GND
FBTCLK_2
FBTCLK_1
DDCLK_2
DDCLK_1
GND
+24V
+24V
A
A*
B
B*
J1501
J1502
(J501)
(J502)
PCB8
HIGH-VOLTAGE PCB 2/2
(J507)
J507
(J505)
J1505
(J504)
J1504
FT19
J2057M
J2057F
RVTR2DC
+24
TR2_CS
GND
NC
HV_SUB_OPN_S
J1
(J1)
HIGH-VOLTAGE
SUB PCB
PCB42
DEV
CHG
TR1
TR2
W1
M
M8
ROTARY MOTOR
FT18
FT17
FT16
FT20
R4
R3
R1
R2
DEVELOPMENT
PRIMARY CHARGING
PRIMARY TRANSFER
PRIMARY TRANSFER
F14-3000-A509

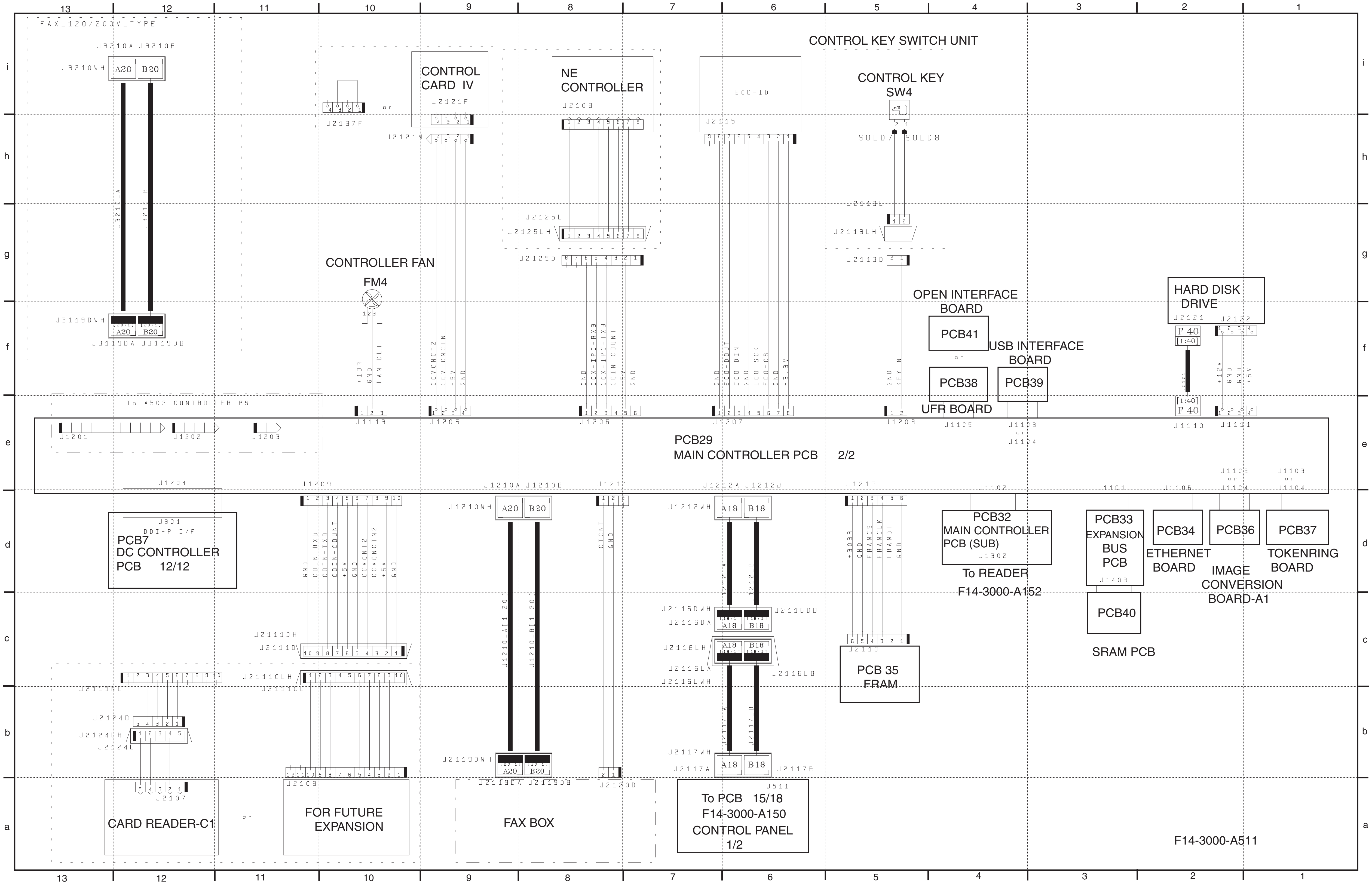
F-2-8

General Circuit Diagram A511(10/11)


13
12
11
10
9
8
7
6
5
4
3
2
1
i
h
g
f
e
d
c
b
a
PCB7
DC CONTROL PCB 11/12
J420
J421
C1_RETRY_SNS
C1_PICKUP_SL
C2_RETRY_SNS
C2_PICKUP_SL
FEED1_A
FEED2_A
REG_CL
REG_SNS
GND
+5V
MUL_CL
FUSER_IN_SNS
FUSER_DELI_SNS
FD1_SNS
REV1_SNS
DUP_CARRY_SNS
DUP_CARRY_CL
TESTOUT_PIN
GND
(For factory)
UI 2/2
PCB13
CONTROL PANEL INVERTER PCB
(J1)
J2137
J2138
(J1113)
(J2)
(J3)
PCB15 7.5-CPU boad
PCB16 7.5-PCB boad
CONTROL PANEL CPU PCB
J2139
(J1110)
(J1111)
J2140
(J1112)
(J1114)
(J1115)
(FOOT SW)
PCB14
PANEL SWITCH CL PCB
J802
J801
LCD1
LCD PANEL
TOUCH PANEL
VA1
VARISTOR
MT7
MT8
FG
Paper guide
VA2
VARISTOR
MT12
MT13
FG
Pre TR2 inner guide
F14-3000-A510

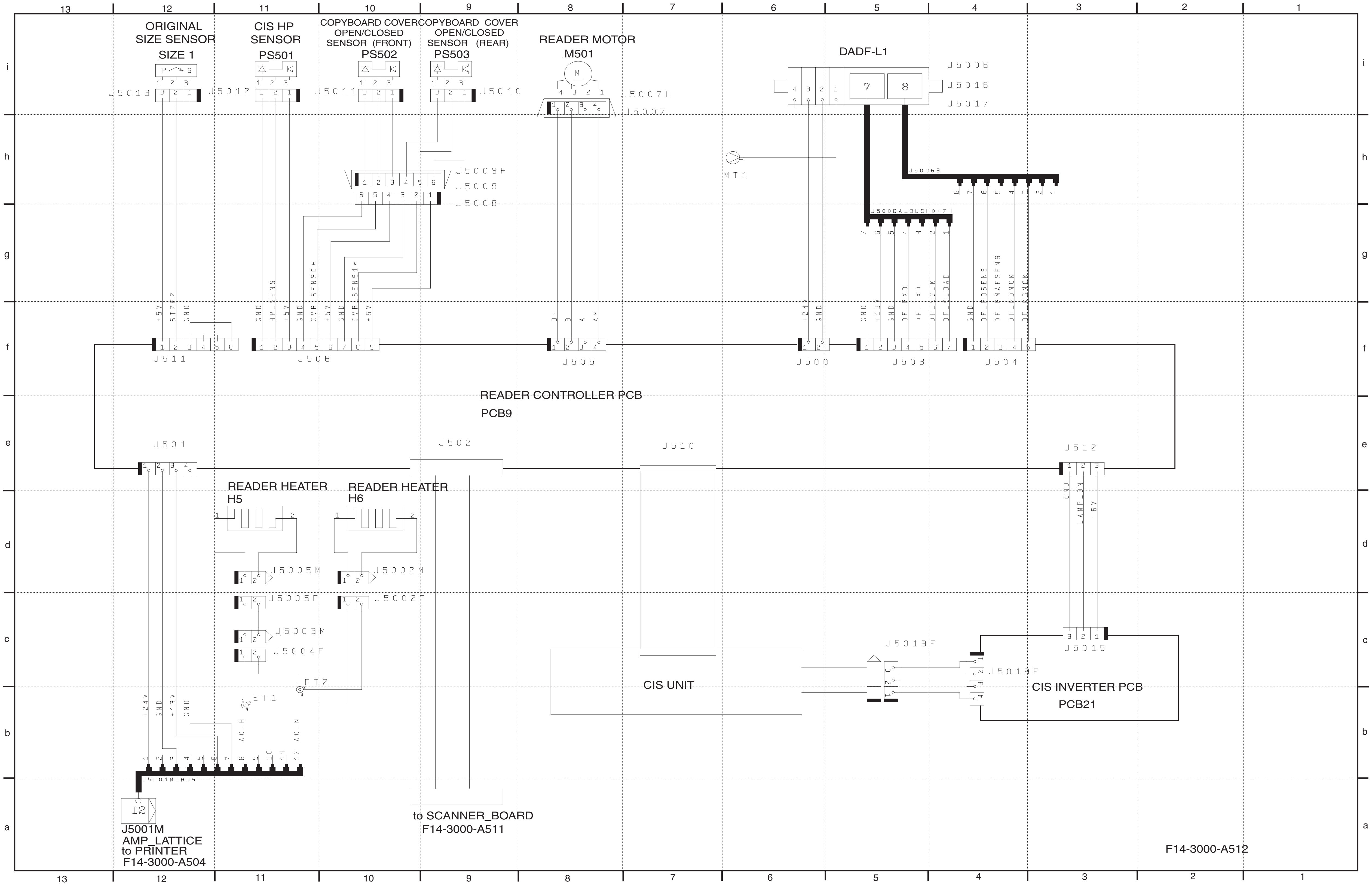
F-2-9

General Circuit Diagram A512(11/11)



13
12
11
10
9
8
7
6
5
4
3
2
1
i
h
g
f
e
d
c
b
a
FAX_120/200V_TYPE
J3210A J3210B
J3210WH
A20
B20
J3210_A
J3210_B
J3119DWH
J3119DA J3119DB
CONTROL CARD IV
J2121F
J2137F
or
J2121M
CONTROLLER FAN
FM4
+13R
GND
FAN-DET
CCVCNCT2
CCV-CNCIN
+5V
GND
NE CONTROLLER
J2109
J2125L
J2125LH
J2125D
GND
CCX-IPC-RX3
CCX-IPC-TX3
COIN-COUNT
+5V
GND
ECO-ID
J2115
GND
ECO-DOUT
ECO-DIN
GND
ECO-SCK
ECO-CS
GND
+3.3V
CONTROL KEY SWITCH UNIT
CONTROL KEY
SW4
SOLD7
SOLD8
J2113L
J2113LH
J2113D
GND
KEY_N
OPEN INTERFACE BOARD
PCB41
or
PCB38
UFR BOARD
USB INTERFACE BOARD
PCB39
HARD DISK DRIVE
J2121
J2122
F 40
[1:40]
+12V
GND
GND
+5V
To A502 CONTROLLER PS
J1201
J1202
J1203
J1113
J1205
J1206
J1207
J1208
J1105
J1103
or
J1104
J1110
J1111
PCB29
MAIN CONTROLLER PCB 2/2
J1204
J1209
J1210A J1210B
J1211
J1212A J1212d
J1213
J1102
J1101
J1106
J1103 or J1104
J1103 or J1104
J301
DDI-P I/F
PCB7
DC CONTROLLER PCB 12/12
GND
COIN-RXD
COIN-TXD
COIN-COUNT
+5V
GND
CCVCNCT2
CCVCNCIN2
+5V
GND
J1210WH
A20
B20
J1210_A[1-20]
J1210_B[1-20]
CICNT
GND
J1212WH
A18
B18
J1212_A
J1212_B
+3.03R
GND
FRAMCS
FRAMCLK
FRAMDT
GND
PCB32
MAIN CONTROLLER PCB (SUB)
J1302
To READER
F14-3000-A152
PCB33
EXPANSION BUS PCB
J1403
PCB40
SRAM PCB
PCB34
ETHERNET BOARD
PCB36
IMAGE CONVERSION BOARD-A1
PCB37
TOKENRING BOARD
J2111DH
J2111D
J2111NL
J2111CLH
J2111CL
J2124D
J2124LH
J2124L
J2107
CARD READER-C1
or
J2108
FOR FUTURE EXPANSION
J2116DWH
J2116DA
J2116DB
J2116LH
J2116LA
J2116LWH
J2116LB
J2117_A
J2117_B
J2117WH
J2117A
J2117B
J511
To PCB 15/18
F14-3000-A150
CONTROL PANEL 1/2
J2119DWH
J2119DA J2119DB
FAX BOX
J2120D
J2310
PCB 35
FRAM
F14-3000-A511

F-2-10


ORIGINAL SIZE SENSOR SIZE 1
CIS HP SENSOR PS501
COPYBOARD COVER OPEN/CLOSED SENSOR (FRONT) PS502
COPYBOARD COVER OPEN/CLOSED SENSOR (REAR) PS503
READER MOTOR M501
DADF-L1
J5013
J5012
J5011
J5010
J5007H
J5007
J5006
J5016
J5017
J5009H
J5009
J5008
J5006B
J5006A_BUS[0-7]
MT1
+5V SIZE2 GND
GND HP_SENS +5V GND CVR_SENS0* +5V GND CVR_SENS1* +5V
B* B A A*
+24V GND
GND +13V GND DF_RXD DF_TXD DF_SCLK DF_SLOAD
GND DF_ODSENS DF_RMAESENS DF_ODMCK DF_KSMCK
J511
J506
J505
J500
J503
J504
READER CONTROLLER PCB
PCB9
J501
J502
J510
J512
READER HEATER H5
READER HEATER H6
GND LAMP_ON 6V
J5005M
J5005F
J5003M
J5004F
J5002M
J5002F
ET1
ET2
+24V GND +13V GND
AC_H AC_N
J5001M_BUS
CIS UNIT
J5019F
J5018F
J5015
CIS INVERTER PCB
PCB21
J5001M
AMP_LATTICE
to PRINTER
F14-3000-A504
to SCANNER_BOARD
F14-3000-A511
F14-3000-A512

F-2-11

Jan 31 2004

Canon